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# ANTHROPOMETRY OF THE AIR FORCE FEMALE HAND

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MARCH 1976

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## FOREWORD

This report was prepared by the Anthropology Branch, Human Engineering Division, Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio. The research was performed in support of Project 7184, "Human Performance in Advanced Systems," Task 718408, "Anthropology for Design," and Work Unit 003, "Anthropometry."

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The art work is by Mr. Jerome Ingram of the University of Dayton's Graphic Arts Department. The photographs were taken by Mr. James Weir of the Wright-Patterson Air Force Base Technical Photograph Department; models are Mrs. Lara Green and Mr. Milton Alexander.

This technical report has been reviewed and is approved.

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## SECTION I

### INTRODUCTION

The Anthropology Branch, Aerospace Medical Research Laboratory, maintains a current and extensive anthropometric data bank on the USAF population and provides body-size data to the Air Force design engineers. This report contains a comprehensive compilation of data on the hands of the female component of the Air Force.

Since the latest published anthropometries of the Air Force population were 15-20 years old (ref. 1, 2), major anthropometric surveys of the male and female USAF population were recently conducted to maintain the currency and validity of the data for today's Air Force. The USAF male population was surveyed in 1967, and the USAF female personnel were surveyed in 1968. Although time and money considerations precluded taking all potentially useful anthropometric dimensions on the entire 1967-1968 sample, the specialized hand survey data covered herein was gathered in conjunction with the 1968 effort.

This report presents basic data, with some statistical analysis of the relationships between certain of these data. Application of the data to specific design problems is left to the design engineer.

## SECTION II

### THE HAND SURVEY

These data were collected at Lackland Air Force Base, Texas, in the summer of 1968 as an adjunct to the major anthropometric survey incorporating 137 physical dimensions of over 1900 Air Force females in the WAF, Nurse Corps, and Biomedical Science Corps. In addition to these 137 dimensions, a total of 56 measurements was secured on the

right hands of 211 females. The sample of 211 was not rigidly selected; instead, all subjects scheduled for the major survey effort on particular days were channeled to an extra measuring station for the hand measurements. The study sample does, however, compare favorably with the larger, major survey sample (see Table I).

TABLE I

| <i>Age</i>         | <i>Stature</i> | <i>Weight</i> | <i>Hand<br/>Breadth</i> | <i>Circ., Meto.<br/>Hand</i> |
|--------------------|----------------|---------------|-------------------------|------------------------------|
| USAF Females       |                |               |                         |                              |
| 1968 Survey N=1905 | 63.8 in.       | 127.3 lbs     | 2.97 in.                | 7.2 in.                      |
| Means and (S.D.s)  | (2.4 in.)      | (16.6 lbs)    | (0.2 in.)               | (0.4 in.)                    |
| USAF Females       |                |               |                         |                              |
| Study Sample N=211 | 64.0 in.       | 128.5 lbs     | 3.03 in.                | 7.4 in.                      |
| Means and (S.D.s)  | (2.6 in.)      | (18.0 lbs)    | (0.2 in.)               | (0.3 in.)                    |

As far as possible the dimensions were selected to conform to certain of the hand dimensions presented in four previous Anthropology Branch publications—"A Sizing System for High Altitude Gloves" (ref. 3), "Nomograph of the Hand and Its Related Dimensions" (ref. 4), "X-Ray Anthropometry of the Hand" (ref. 5), and "Clearance and Performance Values For the Bare-Handed and Pressure-Suited Operator" (ref. 6). These four publications contain measurements obtained both by conventional anthropometric techniques on the fleshy exterior and through radiographs of skeletal segments of the hand. As X-Ray techniques were not used in the collection of the data herein, there can be no common reference to those dimensions in the aforementioned publications that were measured from points precisely located on the bones of the hand. Several of the previously presented dimensions have been carried further; to wit; the finger breadths and finger depths have been used in calculating finger circumferences. Finger circumferences, according to a prominent glove manufacturer, are more useful in the design of gloves than finger breadths and finger depths.

All measurements were secured on the 211

subjects' right hands. An excellent discussion of right hand vs left hand dimensions in "X-Ray Anthropometry of the Hand" (ref. 5, pgs 27-31) contains the following conclusions: The right hand tends to be slightly larger in both length and breadth dimensions than the left, with a majority of the differences statistically significant at the 1% level of confidence; the right hand evidenced slightly greater variability in lengths and less in breadths than did the left hand; and, inter-hand correlations on a dimension-by-dimension basis demonstrate a high degree of predictability from one hand to the other.

The wrist crease is the proximal baseline<sup>1</sup> for the measurement of the hand used throughout this report. This anatomical landmark has been used in previous anthropometry of the hand studies conducted by the author on selected Air Force samples (ref. 6 and unpublished data); by the U.S. Army Natick Laboratories on samples of Naval Recruit, Marine and Army populations (reports in preparation) and on the WAC (ref. 7). Other anatomical baselines used else-

<sup>1</sup>Here specifically defined as a line drawn tangent to the most proximal portions of the diploid flexure crease formed at the bases of the thenar and hypothenar eminences.

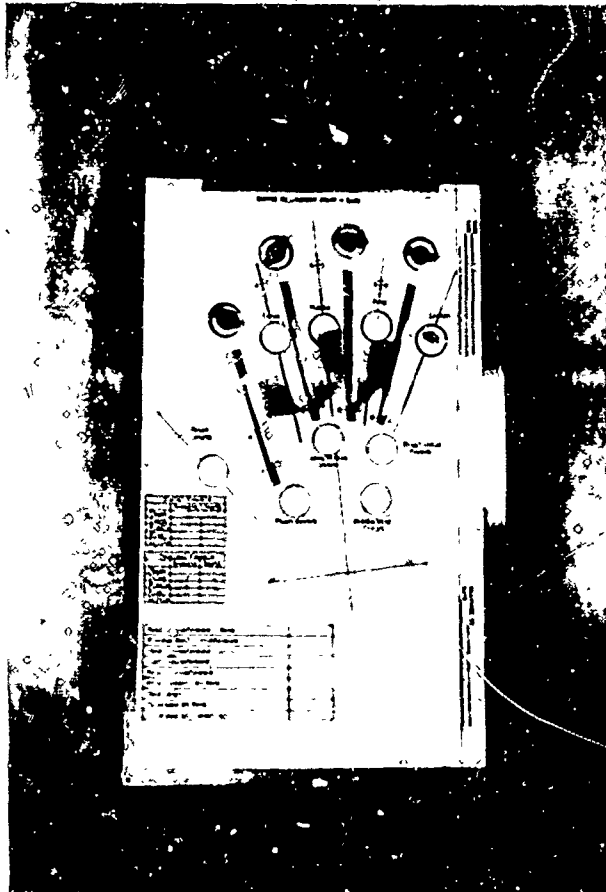
where include the proximal edge of the navicular bone (accurately determinable only through X-Rays (ref. 1-3, 8-16) ); stylium (the distal-most point on the styloid process of the radius, (refs. 17-18) ); the point where the thumb joins the wrist (ref. 19) ; and from the mid-point on a line connecting both styli (radial and ulnar, (refs. 20-21) ). An exact determination of the correlative differences

of these techniques remains to be accomplished. However, an unpublished study by the author on a mixed male-female sample, N of 19, produced Hand Length means of 20.0 cm by measuring to the palpated navicular, 19.7 cm to the palpated radial stylium, and 19.4 cm to the wrist crease; a spread of 0.6 cm in the means between the three.

## SECTION III

### METHODS

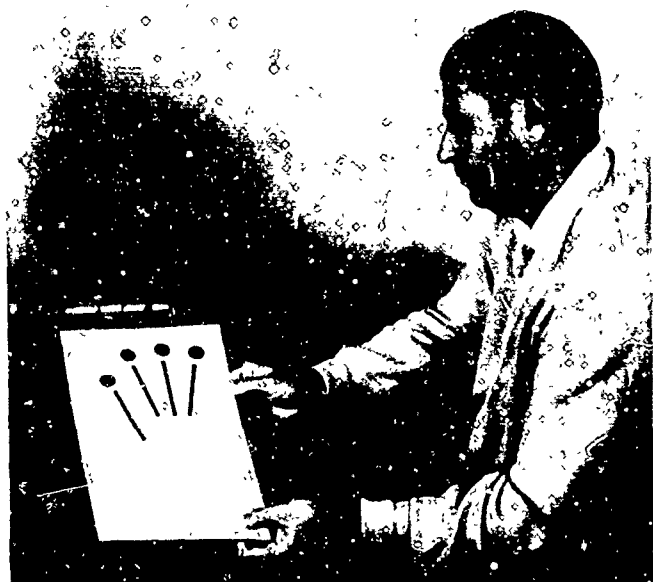
To expedite the flow of subjects, most of the dimensions were measured on a hand measuring board. The actual measuring procedure is shown in the illustrations beginning on next page.



THE MEASURING BOARD



- (1) The data sheet was inserted and clamped onto the measuring board.



- (2) After personal information was recorded, the subject's right hand was raised to an oath-swearing position;

- (3) a plastic 6-inch ruler was attached to the wrist with Scotch double stick tape, one edge of the ruler on the most distal wrist crease;





- (4) the subject's hand was placed, palm down on the measuring board with the upper edge of the ruler (wrist crease) as close to the guide line as possible and the five fingers on the guide lines between the slides. The data blank was marked at both sides of the wrist along the upper edge of the ruler;

- (5) the slides were adjusted and tightened when they just touched the inter-digital webs;



- (6) the position of the fingertips were marked on the data sheet by a pin hole or pencil mark;

(7) Wrist Breadth (dimension #37) was measured;



(8) the hand was again raised and all other caliper-measured dimensions (#1-2, 8-11, 13-14, 16-17, 19-20, 22-23, 25-26, 28-29, 32-33, and 35-36) were secured and recorded on the data sheet;

(9) hand and wrist circumferences (#3-7) were measured with a steel measuring tape and recorded on the data sheet;





(10) the data sheet was then removed from the measuring board. Finger circumferences (#12, 15, 18, 21, 24, 27, 31, 34, and 37) were calculated and recorded.

The raw data was edited and summary statistics computed on an IBM 7040 electronic computer according to techniques and procedures developed by Mr. Edmund Churchill, Antioch College, and discussed by him in "Anthropometric Survey of Turkey, Greece and Italy," pp. 23-34 (ref. 12) and "Statistical Considerations," Chap. 3, in "Human Development," pp. 40-75 (ref. 22).

Contained on the following pages are the summary statistics for the 56 measured hand dimensions. The mean, standard error of the mean, standard deviation, standard error of the standard deviation, range, coefficient of variation, skewness, kurtosis, sample size, and selected percentiles are given for each dimension. The coefficient of variation is merely the standard deviation expressed as a percentage of the mean; thus  $C.V. = (100.0 \times SD/M) \%$ . The values of the listed measures of symmetry and kurtosis provide a basis for judging whether the shape of a distribution of data values resembles that

of the normal distribution. For the normal distribution, the measure of symmetry equals 0 and the measure for kurtosis equals 3. A distribution with values close to these will, in general, have a shape similar to that of the normal distribution. Conversely, values for these measures markedly different from 0 and 3 will usually indicate distributions which differ substantially from the normal one.

The measure of symmetry is computed as the third moment (the average value of the third powers of the deviations from the mean) divided by the third power of the standard deviation. The measure of kurtosis is the fourth moment divided by the fourth power of the standard deviation. In addition are presented comparisons of the sample by age, rank, and Corps; a correlation matrix, bivariate tables, and nomographs.

<sup>1</sup>Personal communication—Mr. E. Churchill, Antioch College.

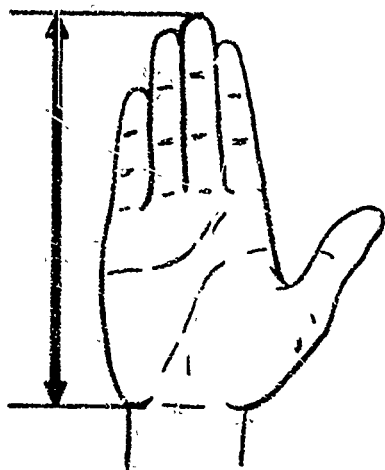
## SECTION IV

### SUMMARY DATA

| <i>Dimension<br/>Number</i> | <i>Dimension<br/>Title</i>  | <i>Page</i> |
|-----------------------------|---|-------------|
| 1                           | Hand Length .....   | 11          |
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| <i>Dimension<br/>Number</i> | <i>Dimension<br/>Title</i>                       | <i>Page</i> |
|-----------------------------|--|-------------|
| 49                          | Digit 3 Length; Fingertip to Crotch Level .....  | 41          |
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| 55                          | Digit 4 Length; Total, Tip to Wrist Crease ..... | 47          |
| 56                          | Digit 5 Length; Total, Tip to Wrist Crease ..... | 48          |

(1)



## HAND LENGTH

Subject's right hand is extended, palm up. With the bar of the sliding caliper parallel to the long axis of her hand, measure the distance from the wrist crease baseline to the tip of the longest finger.



**MEAN: 7.06 in.; 17.93 cm**

**STANDARD DEVIATION: 0.34 in.; 0.86 cm**

**5th PERCENTILE: 6.51 in.; 16.53 cm**

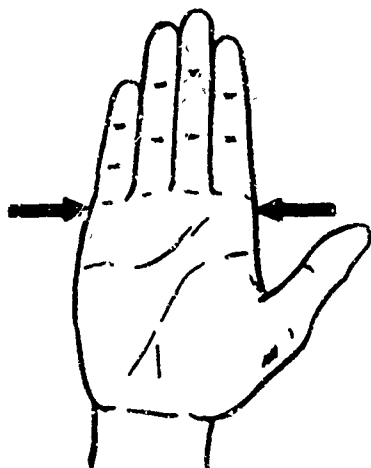
**95th PERCENTILE: 7.60 in.; 19.29 cm**

---

|                           |                                      |              |             |
|---------------------------|--------------------------------------|--------------|-------------|
| Range:                    | 6.18-8.07 in.                        | Percentiles* |             |
| Coefficient of Variation: | 4.79% [calculated on unrounded data] | %            | %           |
| Kurtosis:                 | 2.69                                 | 1—6.37 in.   | 60—7.16 in. |
| Skewness:                 | 0.04                                 | 2—6.41 in.   | 70—7.25 in. |
| Sample Size:              | 211                                  | 3—6.45 in.   | 75—7.31 in. |
|                           |                                      | 5—6.51 in.   | 80—7.36 in. |
|                           |                                      | 10—6.61 in.  | 85—7.42 in. |
|                           |                                      | 15—6.69 in.  | 90—7.50 in. |
|                           |                                      | 20—6.76 in.  | 95—7.60 in. |
|                           |                                      | 25—6.82 in.  | 97—7.65 in. |
|                           |                                      | 30—6.87 in.  | 98—7.69 in. |
|                           |                                      | 40—6.97 in.  | 99—7.73 in. |
|                           |                                      | 50—7.06 in.  |             |

\*The percentile values for a particular set of data are treated as though plotted on normal-probability graph paper, and a smooth curve fitted to the points by conventional curve-fitting procedures.

(2)



## HAND BREADTH;

### METACARPALE

Subject's right hand is extended, palm down, thumb held away from the fingers. With the bar of the sliding caliper lying across the back of her hand, measure the breadth of the hand between metacarpal-phalangeal joints II and V.



**MEAN: 3.03 in.; 7.71 cm**

**STANDARD DEVIATION: 0.15 in.; 0.38 cm**

**5th PERCENTILE: 2.78 in.; 7.06 cm**

**95th PERCENTILE: 3.28 in.; 8.32 cm**

**Range: 2.70-3.43 in.**

**Coefficient of Variation: 4.87%**

**Kurtosis: 2.74**

**Skewness: 0.05**

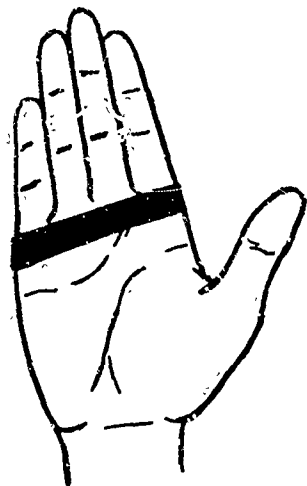
**Sample Size: 211**

#### Percentiles

| %           | %           |
|-------------|-------------|
| 1—2.70 in.  | 60—3.07 in. |
| 2—2.73 in.  | 70—3.11 in. |
| 3—2.75 in.  | 75—3.14 in. |
| 5—2.78 in.  | 80—3.16 in. |
| 10—2.84 in. | 85—3.19 in. |
| 15—2.87 in. | 90—3.22 in. |
| 20—2.90 in. | 95—3.28 in. |
| 25—2.93 in. | 97—3.32 in. |
| 30—2.96 in. | 98—3.35 in. |
| 40—3.00 in. | 99—3.40 in. |
| 50—3.04 in. |             |



(8)



## HAND CIRCUMFERENCE;

METACARPALE

Subject's right hand is extended, palm down, thumb held away from the fingers. With the tape passing over metacarpal-phalangeal joints II and V, measure the circumference of the hand.



**MEAN: 7.37 in.; 18.71 cm**

**STANDARD DEVIATION: 0.33 in.; 0.83 cm**

**5th PERCENTILE: 6.87 in.; 17.45 cm**

**95th PERCENTILE: 7.93 in.; 20.15 cm**

Range: 6.57-8.31 in.

Coefficient of Variation: 4.42%

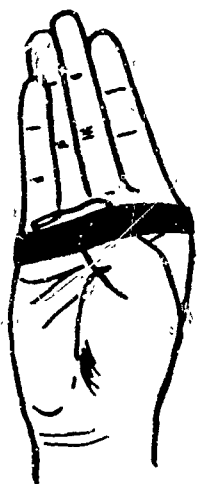
Kurtosis: 2.87

Skewness: 0.28

Sample Size: 211

| Percentiles |             |
|-------------|-------------|
| %           | %           |
| 1—6.67 in.  | 60—7.43 in. |
| 2—6.75 in.  | 70—7.52 in. |
| 3—6.80 in.  | 75—7.57 in. |
| 5—6.87 in.  | 80—7.64 in. |
| 10—6.97 in. | 85—7.71 in. |
| 15—7.03 in. | 90—7.80 in. |
| 20—7.09 in. | 95—7.93 in. |
| 25—7.14 in. | 97—8.02 in. |
| 30—7.18 in. | 98—8.08 in. |
| 40—7.26 in. | 99—8.17 in. |
| 50—7.34 in. |             |

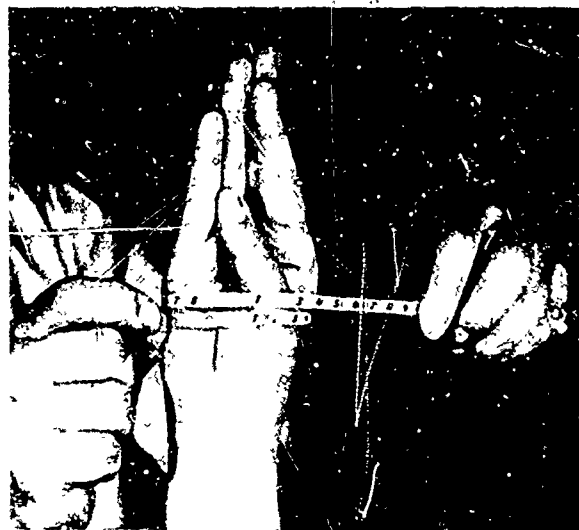
(4)



## HAND CIRCUMFERENCE;

METACARPALE, MINIMUM

Subject extends and narrows her right hand as much as possible. With the tape passing over metacarpal-phalangeal joints II and V, measure the circumference of the hand.



MEAN: 8.45 in.; 21.46 cm

STANDARD DEVIATION: 0.48 in.; 1.23 cm

5th PERCENTILE: 7.65 in.; 19.43 cm

95th PERCENTILE: 9.25 in.; 23.48 cm

Range: 7.07-10.04 in.

Coefficient of Variation: 5.73%

Kurtosis: 3.19

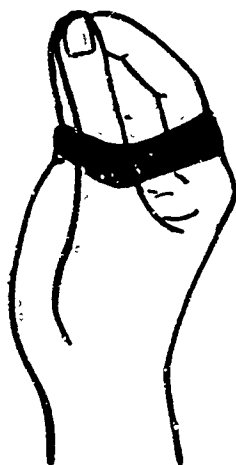
Skewness: 0.11

Sample Size: 211

### Percentiles

| %  |          | %  |          |
|----|----------|----|----------|
| 1  | 7.37 in. | 60 | 8.57 in. |
| 2  | 7.47 in. | 70 | 8.70 in. |
| 3  | 7.55 in. | 75 | 8.77 in. |
| 5  | 7.65 in. | 80 | 8.85 in. |
| 10 | 7.82 in. | 85 | 8.94 in. |
| 15 | 7.94 in. | 90 | 9.06 in. |
| 20 | 8.04 in. | 95 | 9.25 in. |
| 25 | 8.12 in. | 97 | 9.37 in. |
| 30 | 8.20 in. | 98 | 9.47 in. |
| 40 | 8.33 in. | 99 | 9.63 in. |
| 50 | 8.45 in. |    |          |

(5)



## HAND CIRCUMFERENCE;

FINGERTIPS EVEN

Subject taps her five fingertips even on any flat surface. With the fingertips held even, measure the circumference of the hand around the mid-points of the proximal phalanges of all five digits.



**MEAN: 8.90 in.; 22.60 cm**

**STANDARD DEVIATION: 0.46 in.; 1.17 cm**

**5th PERCENTILE: 8.16 in.; 20.73 cm**

**95th PERCENTILE: 9.69 in.; 24.62 cm**

---

**Range:** 7.64-10.08 in.

**Coefficient of Variation:** 5.18%

**Kurtosis:** 2.86

**Skewness:** 0.12

**Sample Size:** 211

### Percentiles

| %           | %            |
|-------------|--------------|
| 1—7.89 in.  | 60—9.00 in.  |
| 2—8.00 in.  | 70—9.14 in.  |
| 3—8.07 in.  | 75—9.21 in.  |
| 5—8.16 in.  | 80—9.30 in.  |
| 10—8.31 in. | 85—9.39 in.  |
| 15—8.41 in. | 90—9.52 in.  |
| 20—8.50 in. | 95—9.69 in.  |
| 25—8.57 in. | 97—9.80 in.  |
| 30—8.64 in. | 98—9.88 in.  |
| 40—8.76 in. | 99—10.00 in. |
| 50—8.88 in. |              |



## FIST CIRCUMFERENCE

Subject makes a tight fist with her thumb tucked against the middle phalanges of digits II and III. With the tape passing over the metacarpal-phalangeal joints of all five digits, measure the circumference of the fist.



**MEAN: 9.78 in.; 24.83 cm**

**STANDARD DEVIATION: 0.52 in.; 1.31 cm**

**5th PERCENTILE: 9.00 in.; 22.86 cm**

**95th PERCENTILE: 10.70 in.; 27.18 cm**

**Range: 8.58-11.46 in.**

**Coefficient of Variation: 5.27%**

**Kurtosis: 3.04**

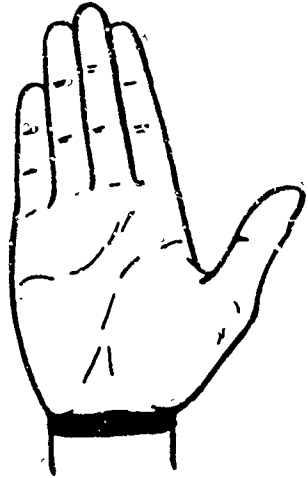
**Skewness: 0.35**

**Sample Size: 211**

### Percentiles

| %           | %            |
|-------------|--------------|
| 1—8.71 in.  | 60—9.88 in.  |
| 2—8.83 in.  | 70—10.03 in. |
| 3—8.90 in.  | 75—10.12 in. |
| 5—9.00 in.  | 80—10.22 in. |
| 10—9.15 in. | 85—10.33 in. |
| 15—9.25 in. | 90—10.48 in. |
| 20—9.34 in. | 95—10.70 in. |
| 25—9.41 in. | 97—10.84 in. |
| 30—9.48 in. | 98—10.93 in. |
| 40—9.61 in. | 99—11.07 in. |
| 50—9.74 in. |              |

(7)



## WRIST CIRCUMFERENCE

Subject's right hand is extended. With the tape perpendicular to the long axis of the forearm, measure the circumference of the wrist at the level of the wrist crease.



**MEAN:** 5.90 in.; 14.98 cm  
**STANDARD DEVIATION:** 0.28 in.; 0.71 cm  
**5th PERCENTILE:** 5.45 in.; 13.85 cm  
**95th PERCENTILE:** 6.38 in.; 16.21 cm

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**Range:** 5.23-6.73 in.

**Coefficient of Variation:** 4.75%

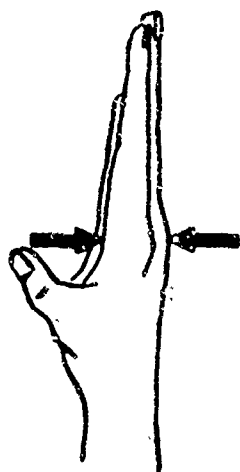
**Kurtosis:** 2.78

**Skewness:** 0.18 in.

**Sample Size:** 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—5.27 in.  | 60—5.96 in. |
| 2—5.35 in.  | 70—6.04 in. |
| 3—5.39 in.  | 75—6.09 in. |
| 5—5.45 in.  | 80—6.14 in. |
| 10—5.54 in. | 85—6.20 in. |
| 15—5.61 in. | 90—6.28 in. |
| 20—5.66 in. | 95—6.38 in. |
| 25—5.70 in. | 97—6.45 in. |
| 30—5.74 in. | 98—6.50 in. |
| 40—5.81 in. | 99—6.56 in. |
| 50—5.89 in. |             |



# HAND THICKNESS;

## METACARPALE III

Subject's right hand is extended. With the sliding caliper, measure the maximum thickness of the metacarpal-phalangeal joint of digit III.



**MEAN:** 1.09 in.; 2.76 cm

**STANDARD DEVIATION:** 0.07 in.; 0.18 cm

**5th PERCENTILE:** 0.97 in.; 2.46 cm

**95th PERCENTILE:** 1.20 in.; 3.05 cm

Range: 0.94-1.30 in.

Coefficient of Variation: 6.41%

Kurtosis: 2.81

Skewness: 0.07

Sample Size: 211

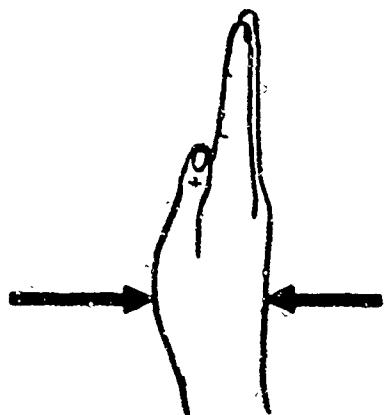
### Percentiles

| %           | %           |
|-------------|-------------|
| 1—0.94 in.  | 60—1.11 in. |
| 2—0.94 in.  | 70—1.13 in. |
| 3—0.95 in.  | 75—1.14 in. |
| 5—0.97 in.  | 80—1.15 in. |
| 10—0.99 in. | 85—1.16 in. |
| 15—1.01 in. | 90—1.18 in. |
| 20—1.03 in. | 95—1.20 in. |
| 25—1.04 in. | 97—1.22 in. |
| 30—1.05 in. | 98—1.23 in. |
| 40—1.07 in. | 99—1.26 in. |
| 50—1.09 in. |             |

(9)

## HAND DEPTH;

### THENAR PAD



Subject's right hand is extended with the thumb lying adjacent to the volar surface of digit II. With the sliding caliper, measure the maximum depth from the volar side of the thenar pad to the dorsal surface of the hand.



**MEAN:** 2.03 in.; 5.17 cm

**STANDARD DEVIATION:** 0.15 in.; 0.39 cm

**5th PERCENTILE:** 1.78 in.; 4.53 cm

**95th PERCENTILE:** 2.29 in.; 5.82 cm

**Range:** 1.65-2.40 in.

**Coefficient of Variation:** 7.55%

**Kurtosis:** 2.40

**Skewness:** 0.01

**Sample Size:** 211

#### Percentiles

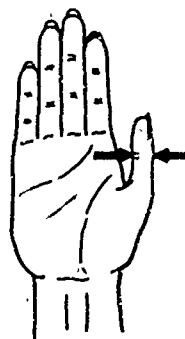
| %           | %           |
|-------------|-------------|
| 1—1.70 in.  | 60—2.08 in. |
| 2—1.73 in.  | 70—2.12 in. |
| 3—1.75 in.  | 75—2.15 in. |
| 5—1.78 in.  | 80—2.17 in. |
| 10—1.83 in. | 85—2.20 in. |
| 15—1.87 in. | 90—2.24 in. |
| 20—1.90 in. | 95—2.29 in. |
| 25—1.92 in. | 97—2.32 in. |
| 30—1.95 in. | 98—2.34 in. |
| 40—1.99 in. | 99—2.36 in. |
| 50—2.03 in. |             |

INTERPHALANGEAL  
JOINT

## — DIGIT 1



BREADTH



DEPTH



CIRCUMFERENCE

Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the interphalangeal joint of digit 1. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                     | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|---------------------|-------------------|-------------------|----------------------|
| MEAN:               | 0.75 in.; 1.90 cm | 0.66 in.; 1.66 cm | 2.21 in.; 5.61 cm    |
| STANDARD DEVIATION: | 0.05 in.; 0.12 cm | 0.04 in.; 0.12 cm | 0.13 in.; 0.33 cm    |
| 5th PERCENTILE:     | 0.68 in.; 1.71 cm | 0.59 in.; 1.49 cm | 2.00 in.; 5.07 cm    |
| 95th PERCENTILE:    | 0.83 in.; 2.11 cm | 0.74 in.; 1.87 cm | 2.43 in.; 6.18 cm    |

|                           | <i>Ed</i> | <i>Dp</i> | <i>Circ</i> | %   | <i>Bd</i> | Percentiles<br><i>Dp</i> | <i>Circ</i> |
|---------------------------|-----------|-----------|-------------|-----|-----------|--------------------------|-------------|
| Coefficient of Variation: | 6.13%     | 6.90%     | 5.95%       | 1—  | 0.65 in.  | 0.56 in.                 | 1.95 in.    |
| Kurtosis:                 | 3.95      | 5.77      | 4.24        | 3—  | 0.67 in.  | 0.58 in.                 | 1.97 in.    |
| Skewness:                 | 0.49      | -0.03     | 0.57        | 5—  | 0.68 in.  | 0.59 in.                 | 2.00 in.    |
|                           |           |           |             | 10— | 0.69 in.  | 0.60 in.                 | 2.04 in.    |
|                           |           |           |             | 25— | 0.72 in.  | 0.63 in.                 | 2.12 in.    |
|                           |           |           |             | 50— | 0.75 in.  | 0.65 in.                 | 2.21 in.    |
|                           |           |           |             | 75— | 0.78 in.  | 0.68 in.                 | 2.29 in.    |
|                           |           |           |             | 90— | 0.81 in.  | 0.71 in.                 | 2.37 in.    |
|                           |           |           |             | 95— | 0.83 in.  | 0.74 in.                 | 2.43 in.    |
|                           |           |           |             | 97— | 0.85 in.  | 0.75 in.                 | 2.49 in.    |
|                           |           |           |             | 99— | 0.89 in.  | 0.79 in.                 | 2.63 in.    |

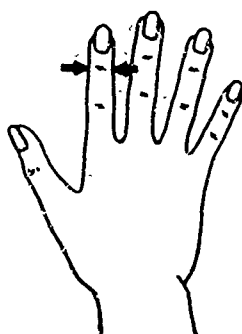
Sample Size: 211

\*The formula used presents an approximation of the joint circumference. The figure given will vary from the true circumference as the shape of the joint varies from that of an ellipse -- a = measured joint breadth; b = measured joint depth.



# DISTAL INTERPHALANGEAL JOINT

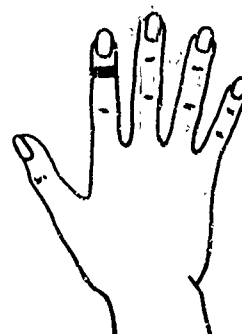
# — DIGIT 2



BREADTH



DEPTH



CIRCUMFERENCE

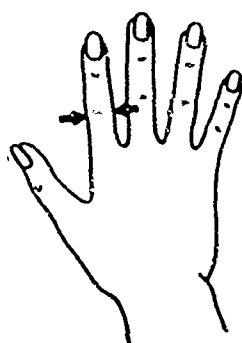
Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the distal interphalangeal joint of digit 2. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                         | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|-------------------------|-------------------|-------------------|----------------------|
| <b>MEAN:</b>            | 0.61 in.; 1.54 cm | 0.31 in.; 1.23 cm | 1.76 in.; 4.46 cm    |
| <b>STANDARD</b>         |                   |                   |                      |
| <b>DEVIATION:</b>       | 0.04 in.; 0.10 cm | 0.04 in.; 0.09 cm | 0.10 in.; 0.26 cm    |
| <b>5th PERCENTILE:</b>  | 0.54 in.; 1.38 cm | 0.45 in.; 1.15 cm | 1.60 in.; 4.08 cm    |
| <b>95th PERCENTILE:</b> | 0.68 in.; 1.71 cm | 0.57 in.; 1.45 cm | 1.94 in.; 4.94 cm    |

|                           | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> | <i>Percentiles</i> |          |          |
|---------------------------|-----------|-----------|-------------|--------------------|----------|----------|
|                           | <i>%</i>  | <i>Bd</i> | <i>Dp</i>   | <i>Circ</i>        |          |          |
| Coefficient of Variation: | 6.33%     | 6.95%     | 5.85%       | 1—0.53 in.         | 0.43 in. | 1.60 in. |
| Kurtosis:                 | 2.61      | 2.84      | 2.49        | 3—0.54 in.         | 0.44 in. | 1.60 in. |
| Skewness:                 | 0.33      | 0.42      | 0.36        | 5—0.54 in.         | 0.45 in. | 1.60 in. |
| Sample Size: 211          |           |           |             | 10—0.55 in.        | 0.46 in. | 1.62 in. |
|                           |           |           |             | 25—0.58 in.        | 0.48 in. | 1.68 in. |
|                           |           |           |             | 50—0.61 in.        | 0.50 in. | 1.74 in. |
|                           |           |           |             | 75—0.63 in.        | 0.53 in. | 1.82 in. |
|                           |           |           |             | 90—0.66 in.        | 0.56 in. | 1.90 in. |
|                           |           |           |             | 95—0.68 in.        | 0.57 in. | 1.94 in. |
|                           |           |           |             | 97—0.69 in.        | 0.58 in. | 1.97 in. |
|                           |           |           |             | 99—0.71 in.        | 0.60 in. | 2.01 in. |

**PROXIMAL  
INTERPHALANGEAL  
JOINT**

**— DIGIT 2**



**BREADTH**



**DEPTH**



**CIRCUMFERENCE**

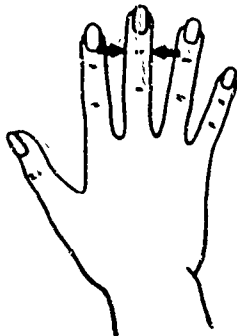
Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the proximal interphalangeal joint of digit 2. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                                | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|--------------------------------|-------------------|-------------------|----------------------|
| <b>MEAN:</b>                   | 0.72 in.; 1.82 cm | 0.64 in.; 1.62 cm | 2.12 in.; 5.40 cm    |
| <b>STANDARD<br/>DEVIATION:</b> | 0.04 in.; 0.10 cm | 0.04 in.; 0.10 cm | 0.11 in.; 0.29 cm    |
| <b>5th PERCENTILE:</b>         | 0.65 in.; 1.65 cm | 0.57 in.; 1.45 cm | 1.95 in.; 4.96 cm    |
| <b>95th PERCENTILE:</b>        | 0.79 in.; 2.00 cm | 0.71 in.; 1.79 cm | 2.31 in.; 5.88 cm    |

|                           | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> | <i>Percentiles</i> |           |           |             |
|---------------------------|-----------|-----------|-------------|--------------------|-----------|-----------|-------------|
|                           |           |           |             | <i>%</i>           | <i>Dp</i> | <i>Bd</i> | <i>Circ</i> |
| Coefficient of Variation: | 5.66%     | 6.22%     | 5.30%       | 1—0.63 in.         |           | 0.54 in.  | 1.91 in.    |
| Kurtosis:                 | 3.61      | 2.72      | 3.64        | 3—0.64 in.         |           | 0.56 in.  | 1.93 in.    |
| Skewness:                 | 0.47      | 0.04      | 0.41        | 5—0.65 in.         |           | 0.57 in.  | 1.95 in.    |
|                           |           |           |             | 10—0.66 in.        |           | 0.58 in.  | 1.99 in.    |
|                           |           |           |             | 25—0.69 in.        |           | 0.61 in.  | 2.05 in.    |
|                           |           |           |             | 50—0.71 in.        |           | 0.64 in.  | 2.12 in.    |
|                           |           |           |             | 75—0.74 in.        |           | 0.67 in.  | 2.20 in.    |
|                           |           |           |             | 90—0.77 in.        |           | 0.69 in.  | 2.27 in.    |
|                           |           |           |             | 95—0.79 in.        |           | 0.71 in.  | 2.31 in.    |
|                           |           |           |             | 97—0.80 in.        |           | 0.72 in.  | 2.35 in.    |
|                           |           |           |             | 99—0.83 in.        |           | 0.73 in.  | 2.42 in.    |
| Sample Size:              | 211       |           |             |                    |           |           |             |

# DISTAL INTERPHALANGEAL JOINT

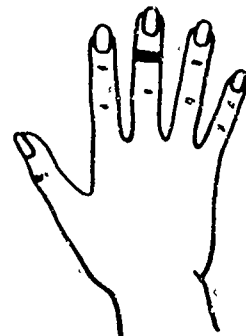
# — DIGIT 3



BREADTH



DEPTH



CIRCUMFERENCE

Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the distal interphalangeal joint of digit 3. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

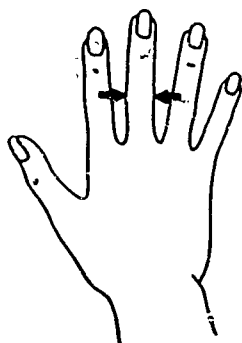
|                  | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|------------------|-------------------|-------------------|----------------------|
| MEAN:            | 0.60 in.; 1.53 cm | 0.52 in.; 1.31 cm | 1.76 in.; 4.48 cm    |
| STANDARD         |                   |                   |                      |
| DEVIATION:       | 0.04 in.; 0.09 cm | 0.04 in.; 0.09 cm | 0.10 in.; 0.26 cm    |
| 5th PERCENTILE:  | 0.54 in.; 1.38 cm | 0.46 in.; 1.16 cm | 1.61 in.; 4.10 cm    |
| 95th PERCENTILE: | 0.67 in.; 1.70 cm | 0.58 in.; 1.48 cm | 1.94 in.; 4.93 cm    |

|                           | Percentiles |           |             |             |           |           |             |
|---------------------------|-------------|-----------|-------------|-------------|-----------|-----------|-------------|
|                           | <i>Bd</i>   | <i>Dp</i> | <i>Circ</i> | %           | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> |
| Coefficient of Variation: | 6.01%       | 7.11%     | 5.75%       | 1—0.53 in.  | 0.43 in.  | 1.56 in.  |             |
| Kurtosis:                 | 2.90        | 2.78      | 2.79        | 3—0.54 in.  | 0.45 in.  | 1.60 in.  |             |
| Skewness:                 | 0.28        | 0.22      | 0.25        | 5—0.54 in.  | 0.46 in.  | 1.61 in.  |             |
|                           |             |           |             | 10—0.56 in. | 0.47 in.  | 1.64 in.  |             |
|                           |             |           |             | 25—0.58 in. | 0.49 in.  | 1.69 in.  |             |
|                           |             |           |             | 50—0.60 in. | 0.51 in.  | 1.76 in.  |             |
|                           |             |           |             | 75—0.62 in. | 0.54 in.  | 1.83 in.  |             |
|                           |             |           |             | 90—0.65 in. | 0.57 in.  | 1.90 in.  |             |
|                           |             |           |             | 95—0.67 in. | 0.58 in.  | 1.94 in.  |             |
|                           |             |           |             | 97—0.68 in. | 0.59 in.  | 1.96 in.  |             |
|                           |             |           |             | 99—0.69 in. | 0.61 in.  | 1.99 in.  |             |
| Sample Size: 211          |             |           |             |             |           |           |             |

Sample Size: 211

**PROXIMAL  
INTERPHALANGEAL  
JOINT**

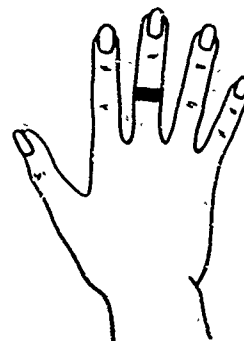
**— DIGIT 3**



**BREADTH**



**DEPTH**



**CIRCUMFERENCE**

Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the proximal interphalangeal joint of digit 3. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                         | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|-------------------------|-------------------|-------------------|----------------------|
| <b>MEAN:</b>            | 0.72 in.; 1.83 cm | 0.66 in.; 1.67 cm | 2.17 in.; 5.50 cm    |
| <b>STANDARD</b>         |                   |                   |                      |
| <b>DEVIATION:</b>       | 0.04 in.; 0.10 cm | 0.04 in.; 0.11 cm | 0.11 in.; 0.28 cm    |
| <b>5th PERCENTILE:</b>  | 0.66 in.; 1.68 cm | 0.59 in.; 1.49 cm | 1.99 in.; 5.05 cm    |
| <b>95th PERCENTILE:</b> | 0.79 in.; 2.01 cm | 0.73 in.; 1.86 cm | 2.36 in.; 6.00 cm    |

|                           |           |           |             | Percentiles |           |           |             |
|---------------------------|-----------|-----------|-------------|-------------|-----------|-----------|-------------|
|                           | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> | %           | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> |
| Coefficient of Variation: | 5.18%     | 6.50%     | 5.15%       | 1—          | 0.65 in.  | 0.57 in.  | 1.95 in.    |
|                           |           |           |             | 3—          | 0.66 in.  | 0.58 in.  | 1.97 in.    |
| Kurtosis:                 | 3.38      | 3.09      | 3.31        | 5—          | 0.66 in.  | 0.59 in.  | 1.99 in.    |
|                           |           |           |             | 10—         | 0.67 in.  | 0.60 in.  | 2.02 in.    |
| Skewness:                 | 0.40      | 0.26      | 0.44        | 25—         | 0.69 in.  | 0.63 in.  | 2.09 in.    |
|                           |           |           |             | 50—         | 0.72 in.  | 0.66 in.  | 2.16 in.    |
| Sample Size: 211          |           |           |             | 75—         | 0.75 in.  | 0.69 in.  | 2.23 in.    |
|                           |           |           |             | 90—         | 0.77 in.  | 0.71 in.  | 2.31 in.    |
|                           |           |           |             | 95—         | 0.79 in.  | 0.73 in.  | 2.36 in.    |
|                           |           |           |             | 97—         | 0.80 in.  | 0.74 in.  | 2.40 in.    |
|                           |           |           |             | 99—         | 0.84 in.  | 0.77 in.  | 2.50 in.    |

# DISTAL INTERPHALANGEAL JOINT

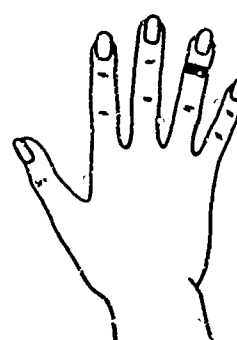
# — DIGIT 4



BREADTH



DEPTH



CIRCUMFERENCE

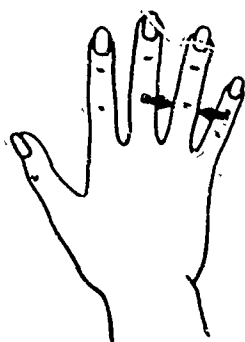
Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the distal interphalangeal joint of digit 4. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                         | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|-------------------------|-------------------|-------------------|----------------------|
| <b>MEAN:</b>            | 0.57 in.; 1.43 cm | 0.49 in.; 1.25 cm | 1.66 in.; 4.22 cm    |
| <b>STANDARD</b>         |                   |                   |                      |
| <b>DEVIATION:</b>       | 0.03 in.; 0.09 cm | 0.03 in.; 0.09 cm | 0.10 in.; 0.24 cm    |
| <b>5th PERCENTILE:</b>  | 0.51 in.; 1.30 cm | 0.43 in.; 1.10 cm | 1.52 in.; 3.86 cm    |
| <b>95th PERCENTILE:</b> | 0.63 in.; 1.60 cm | 0.55 in.; 1.40 cm | 1.83 in.; 4.64 cm    |

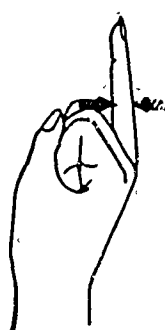
|                           | Percentiles |           |             |     |           |           |             |
|---------------------------|-------------|-----------|-------------|-----|-----------|-----------|-------------|
|                           | <i>Bd</i>   | <i>Dp</i> | <i>Circ</i> | %   | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> |
|                           |             |           |             | 1—  | 0.49 in.  | 0.40 in.  | 1.43 in.    |
| Coefficient of Variation: | 5.91%       | 6.95%     | 5.70%       | 3—  | 0.51 in.  | 0.42 in.  | 1.49 in.    |
| Kurtosis:                 | 3.34        | 3.55      | 3.55        | 5—  | 0.51 in.  | 0.43 in.  | 1.52 in.    |
| Skewness:                 | 0.50        | 0.13      | 0.38        | 10— | 0.52 in.  | 0.45 in.  | 1.55 in.    |
|                           |             |           |             | 25— | 0.54 in.  | 0.47 in.  | 1.60 in.    |
|                           |             |           |             | 50— | 0.56 in.  | 0.49 in.  | 1.65 in.    |
|                           |             |           |             | 75— | 0.59 in.  | 0.51 in.  | 1.71 in.    |
| Sample Size: 211          |             |           |             | 90— | 0.61 in.  | 0.54 in.  | 1.78 in.    |
|                           |             |           |             | 95— | 0.63 in.  | 0.55 in.  | 1.83 in.    |
|                           |             |           |             | 97— | 0.64 in.  | 0.56 in.  | 1.86 in.    |
|                           |             |           |             | 99— | 0.65 in.  | 0.58 in.  | 1.92 in.    |

**PROXIMAL  
INTERPHALANGEAL  
JOINT**

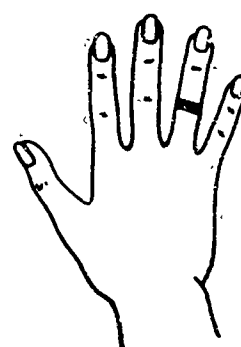
— **DIGIT 4**



**BREADTH**



**DEPTH**



**CIRCUMFERENCE**

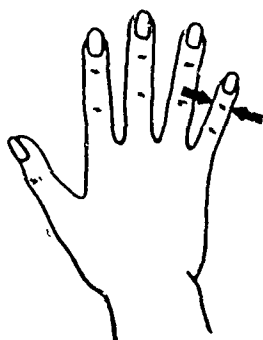
Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the proximal interphalangeal joint of digit 4. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                         | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|-------------------------|-------------------|-------------------|----------------------|
| <b>MEAN:</b>            | 0.67 in.; 1.69 cm | 0.62 in.; 1.57 cm | 2.01 in.; 5.12 cm    |
| <b>STANDARD</b>         |                   |                   |                      |
| <b>DEVIATION:</b>       | 0.04 in.; 0.10 cm | 0.04 in.; 0.11 cm | 0.10 in.; 0.27 cm    |
| <b>5th PERCENTILE:</b>  | 0.60 in.; 1.51 cm | 0.55 in.; 1.39 cm | 1.85 in.; 4.69 cm    |
| <b>95th PERCENTILE:</b> | 0.73 in.; 1.85 cm | 0.69 in.; 1.76 cm | 2.20 in.; 5.59 cm    |

|                           | <i>Percentiles</i> |           |             |
|---------------------------|--------------------|-----------|-------------|
|                           | <i>Bd</i>          | <i>Dp</i> | <i>Circ</i> |
| Coefficient of Variation: | 5.80 %             | 6.84%     | 5.19%       |
| Kurtosis:                 | 2.77               | 2.79      | 3.25        |
| Skewness:                 | 0.01               | 0.24      | 0.23        |
| Sample Size: 211          |                    |           |             |
|                           | %                  | <i>Bd</i> | <i>Dp</i>   |
|                           | 1—                 | 0.58 in.  | 0.53 in.    |
|                           | 3—                 | 0.59 in.  | 0.54 in.    |
|                           | 5—                 | 0.60 in.  | 0.55 in.    |
|                           | 10—                | 0.61 in.  | 0.56 in.    |
|                           | 25—                | 0.64 in.  | 0.59 in.    |
|                           | 50—                | 0.67 in.  | 0.62 in.    |
|                           | 75—                | 0.69 in.  | 0.65 in.    |
|                           | 90—                | 0.71 in.  | 0.67 in.    |
|                           | 95—                | 0.73 in.  | 0.69 in.    |
|                           | 97—                | 0.74 in.  | 0.70 in.    |
|                           | 99—                | 0.76 in.  | 0.73 in.    |

# DISTAL INTERPHALANGEAL JOINT

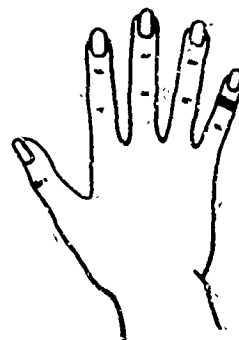
# — DIGIT 5



BREADTH



DEPTH



CIRCUMFERENCE

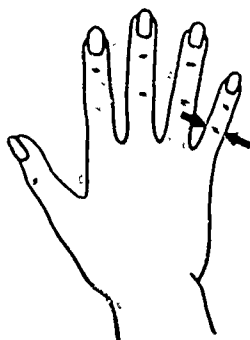
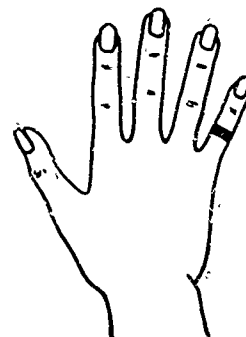
Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the distal interphalangeal joint of digit 5. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                         | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|-------------------------|-------------------|-------------------|----------------------|
| <b>MEAN:</b>            | 0.52 in.; 1.31 cm | 0.45 in.; 1.13 cm | 1.52 in.; 3.86 cm    |
| <b>STANDARD</b>         |                   |                   |                      |
| <b>DEVIATION:</b>       | 0.03 in.; 0.09 cm | 0.03 in.; 0.09 cm | 0.09 in.; 0.24 cm    |
| <b>5th PERCENTILE:</b>  | 0.46 in.; 1.17 cm | 0.39 in.; 0.99 cm | 1.38 in.; 3.51 cm    |
| <b>95th PERCENTILE:</b> | 0.58 in.; 1.47 cm | 0.51 in.; 1.29 cm | 1.67 in.; 4.24 cm    |

|                           |           |           |             | Percentiles |           |           |             |
|---------------------------|-----------|-----------|-------------|-------------|-----------|-----------|-------------|
|                           | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> | %           | <i>Bd</i> | <i>Dp</i> | <i>Circ</i> |
| Coefficient of Variation: | 6.58%     | 7.51%     | 6.16%       | 1—          | 0.45 in.  | 0.37 in.  | 1.36 in.    |
|                           |           |           |             | 3—          | 0.46 in.  | 0.38 in.  | 1.37 in.    |
|                           |           |           |             | 5—          | 0.46 in.  | 0.39 in.  | 1.38 in.    |
| Kurtosis:                 | 2.88      | 3.40      | 3.24        | 10—         | 0.47 in.  | 0.40 in.  | 1.40 in.    |
| Skewness:                 | 0.25      | 0.32      | 0.22        | 25—         | 0.49 in.  | 0.42 in.  | 1.43 in.    |
|                           |           |           |             | 50—         | 0.52 in.  | 0.45 in.  | 1.51 in.    |
|                           |           |           |             | 75—         | 0.54 in.  | 0.47 in.  | 1.59 in.    |
| Sample Size: 211          |           |           |             | 90—         | 0.56 in.  | 0.49 in.  | 1.63 in.    |
|                           |           |           |             | 95—         | 0.58 in.  | 0.51 in.  | 1.67 in.    |
|                           |           |           |             | 97—         | 0.59 in.  | 0.52 in.  | 1.71 in.    |
|                           |           |           |             | 99—         | 0.61 in.  | 0.54 in.  | 1.75 in.    |

**PROXIMAL  
INTERPHALANGEAL  
JOINT**

**— DIGIT 5**

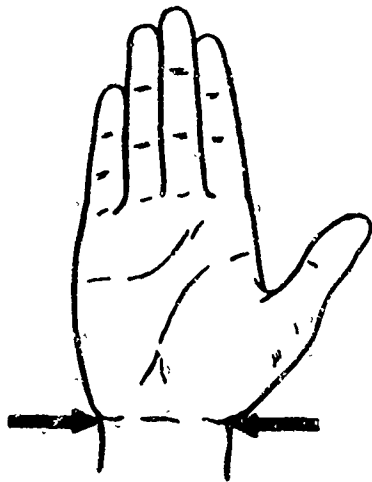
**BREADTH****DEPTH****CIRCUMFERENCE**

Subject's right hand is extended. With the sliding caliper, measure the maximum breadth and maximum depth of the proximal interphalangeal joint of digit 5. Using the formula  $C = 2\pi \sqrt{\frac{a^2 + b^2}{2}}$ , calculate the circumference of the joint.

|                         | <i>Breadth</i>    | <i>Depth</i>      | <i>Circumference</i> |
|-------------------------|-------------------|-------------------|----------------------|
| <b>MEAN:</b>            | 0.57 in.; 1.46 cm | 0.55 in.; 1.39 cm | 1.77 in.; 4.48 cm    |
| <b>STANDARD</b>         |                   |                   |                      |
| <b>DEVIATION:</b>       | 0.04 in.; 0.09 cm | 0.04 in.; 0.09 cm | 0.10 in.; 0.25 cm    |
| <b>5th PERCENTILE:</b>  | 0.52 in.; 1.32 cm | 0.50 in.; 1.27 cm | 1.63 in.; 4.13 cm    |
| <b>95th PERCENTILE:</b> | 0.65 in.; 1.64 cm | 0.61 in.; 1.56 cm | 1.95 in.; 4.94 cm    |

|                           | <i>Percentiles</i> |           |             |
|---------------------------|--------------------|-----------|-------------|
|                           | <i>%</i>           | <i>Bd</i> | <i>Circ</i> |
| Coefficient of Variation: | 1—                 | 0.49 in.  | 0.47 in.    |
|                           | 3—                 | 0.51 in.  | 0.49 in.    |
|                           | 5—                 | 0.52 in.  | 0.50 in.    |
|                           | 10—                | 0.53 in.  | 0.51 in.    |
|                           | 25—                | 0.55 in.  | 0.53 in.    |
|                           | 50—                | 0.57 in.  | 0.55 in.    |
|                           | 75—                | 0.60 in.  | 0.57 in.    |
|                           | 90—                | 0.62 in.  | 0.59 in.    |
|                           | 95—                | 0.65 in.  | 0.61 in.    |
|                           | 97—                | 0.66 in.  | 0.63 in.    |
| Kurtosis:                 | 99—                | 0.68 in.  | 0.67 in.    |
|                           |                    |           |             |
| Skewness:                 |                    |           |             |
|                           |                    |           |             |
| Sample Size:              |                    |           |             |
|                           |                    |           |             |





## WRIST BREADTH

Subject's right hand and wrist lie on the measuring board. With the sliding caliper, measure the breadth of the wrist at the level of the wrist crease baseline.



**MEAN: 2.29 in.; 5.83 cm**

**STANDARD DEVIATION: 0.13 in.; 0.33 cm**

**5th PERCENTILE: 2.11 in.; 5.36 cm**

**95th PERCENTILE: 2.54 in.; 6.44 cm**

Range: 2.01-2.68 in.

Coefficient of Variation: 5.61%

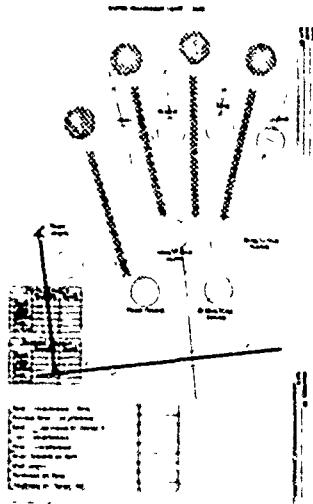
Kurtosis: 3.04

Skewness: 0.54

Sample Size: 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—2.04 in.  | 60—2.31 in. |
| 2—2.07 in.  | 70—2.35 in. |
| 3—2.09 in.  | 75—2.37 in. |
| 5—2.11 in.  | 80—2.40 in. |
| 10—2.14 in. | 85—2.43 in. |
| 15—2.17 in. | 90—2.47 in. |
| 20—2.18 in. | 95—2.54 in. |
| 25—2.20 in. | 97—2.58 in. |
| 30—2.22 in. | 98—2.61 in. |
| 40—2.25 in. | 99—2.65 in. |
| 50—2.28 in. |             |



## DIGIT 1 HEIGHT;

PERPENDICULAR TO WRIST CREASE

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the midpoint of the tip of digit 1.



**MEAN: 3.40 in.; 8.64 cm**

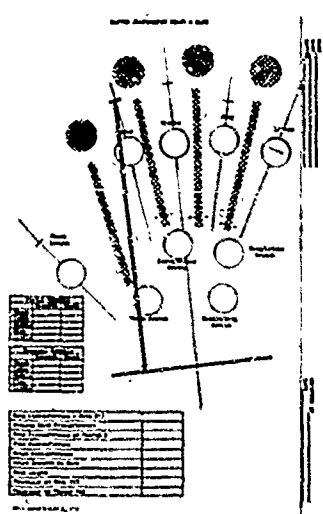
**STANDARD DEVIATION: 0.33 in.; 0.84 cm**

**5th PERCENTILE: 2.84 in.; 7.21 cm**

**95th PERCENTILE: 3.94 in.; 10.00 cm**

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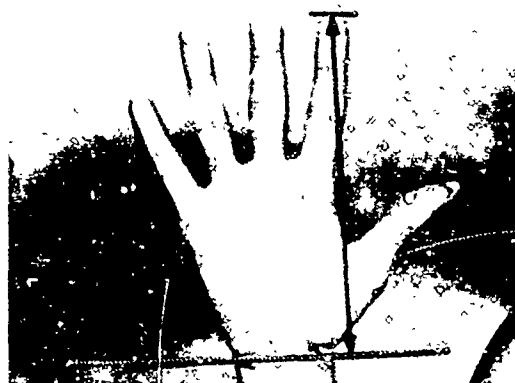
|                           |               | Percentiles |             |
|---------------------------|---------------|-------------|-------------|
| Range:                    | 2.51-4.29 in. | %           | %           |
| Coefficient of Variation: | 9.69 %        | 1—2.60 in.  | 60—3.49 in. |
|                           |               | 2—2.69 in.  | 70—3.58 in. |
| Kurtosis:                 | 2.98          | 3—2.75 in.  | 75—3.62 in. |
|                           |               | 5—2.84 in.  | 80—3.67 in. |
| Skewness:                 | -0.07         | 10—2.97 in. | 85—3.73 in. |
|                           |               | 15—3.06 in. | 90—3.81 in. |
| Sample Size: 211          |               | 20—3.13 in. | 95—3.94 in. |
|                           |               | 25—3.19 in. | 97—4.03 in. |
|                           |               | 30—3.24 in. | 98—4.10 in. |
|                           |               | 40—3.33 in. | 99—4.23 in. |
|                           |               | 50—3.41 in. |             |



## DIGIT 2 HEIGHT;

PERPENDICULAR TO WRIST CREASE

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the midpoint of the tip of digit 2.



**MEAN:** 6.47 in.; 16.43 cm

**STANDARD DEVIATION:** 0.36 in.; 0.92 cm

**5th PERCENTILE:** 5.87 in.; 14.91 cm

**95th PERCENTILE:** 7.05 in.; 17.90 cm

**Range:** 5.47-7.56 in.

**Coefficient of Variation:** 5.58%

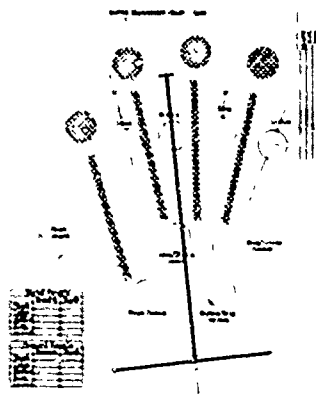
**Kurtosis:** 2.72

**Skewness:** -0.01

**Sample Size:** 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—5.70 in.  | 60—6.57 in. |
| 2—5.76 in.  | 70—6.67 in. |
| 3—5.80 in.  | 75—6.73 in. |
| 5—5.87 in.  | 80—6.79 in. |
| 10—5.99 in. | 85—6.85 in. |
| 15—6.08 in. | 90—6.93 in. |
| 20—6.15 in. | 95—7.05 in. |
| 25—6.21 in. | 97—7.12 in. |
| 30—6.27 in. | 98—7.16 in. |
| 40—6.38 in. | 99—7.24 in. |
| 50—6.47 in. |             |



## DIGIT 3 HEIGHT;

PERPENDICULAR TO WRIST CREASE

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the midpoint of the tip of digit 3.



**MEAN: 6.94 in.; 17.63 cm**

**STANDARD DEVIATION: 0.35 in.; 0.38 cm**

**5th PERCENTILE: 6.38 in.; 16.20 cm**

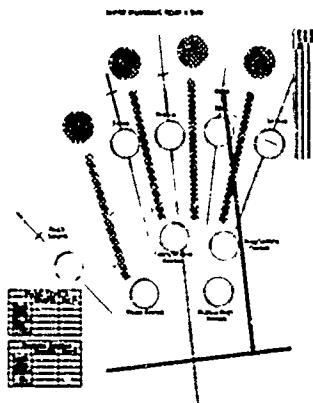
**95th PERCENTILE: 7.50 in.; 19.05 cm**

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|                           |               | Percentiles |             |
|---------------------------|---------------|-------------|-------------|
|                           |               | %           | %           |
| Range:                    | 6.02-7.95 in. | 1—6.17 in.  | 60—7.04 in. |
| Coefficient of Variation: | 4.97%         | 2—6.25 in.  | 70—7.14 in. |
| Kurtosis:                 | 2.72          | 3—6.30 in.  | 75—7.19 in. |
| Skewness:                 | -0.01         | 5—6.38 in.  | 80—7.25 in. |
|                           |               | 10—6.49 in. | 85—7.32 in. |
|                           |               | 15—6.58 in. | 90—7.40 in. |
|                           |               | 20—6.64 in. | 95—7.50 in. |
|                           |               | 25—6.70 in. | 97—7.56 in. |
|                           |               | 30—6.75 in. | 98—7.59 in. |
| Sample Size: 211          |               | 40—6.85 in. | 99—7.63 in. |
|                           |               | 50—6.94 in. |             |

# DIGIT 4 HEIGHT;

PERPENDICULAR TO WRIST CREASE



Measured on the data blank, the perpendicular distance from the wrist crease baseline to the midpoint of the tip of digit 4.



**MEAN: 6.44 in.; 16.36 cm**

**STANDARD DEVIATION: 0.35 in.; 0.89 cm**

**5th PERCENTILE: 5.88 in.; 14.95 cm**

**95th PERCENTILE: 7.02 in.; 17.84 cm**

**Range: 5.43-7.52 in.**

**Coefficient of Variation: 5.42%**

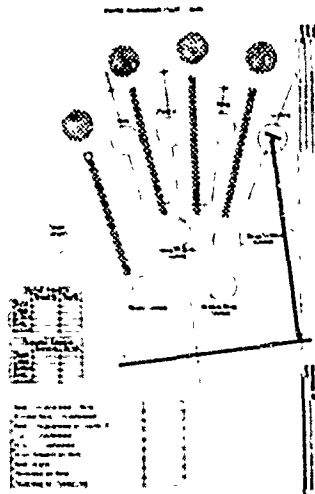
**Kurtosis: 3.14**

**Skewness: 0.10**

**Sample Size: 211**

## Percentiles

| %           | %           |
|-------------|-------------|
| 1—5.67 in.  | 60—6.53 in. |
| 2—5.76 in.  | 70—6.62 in. |
| 3—5.81 in.  | 75—6.68 in. |
| 5—5.88 in.  | 80—6.74 in. |
| 10—6.00 in. | 85—6.81 in. |
| 15—6.08 in. | 90—6.90 in. |
| 20—6.14 in. | 95—7.02 in. |
| 25—6.20 in. | 97—7.10 in. |
| 30—6.25 in. | 98—7.16 in. |
| 40—6.35 in. | 99—7.24 in. |
| 50—6.44 in. |             |



## DIGIT 5 HEIGHT;

PERPENDICULAR TO WRIST CREASE

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the midpoint of the tip of digit 5.



MEAN: 5.12 in.; 13.00 cm

STANDARD DEVIATION: 0.35 in.; 0.89 cm

5th PERCENTILE: 4.53 in.; 11.52 cm

95th PERCENTILE: 5.68 in.; 14.44 cm

Range: 4.06-6.22 in.

Coefficient of Variation: 6.87%

Kurtosis: 3.45

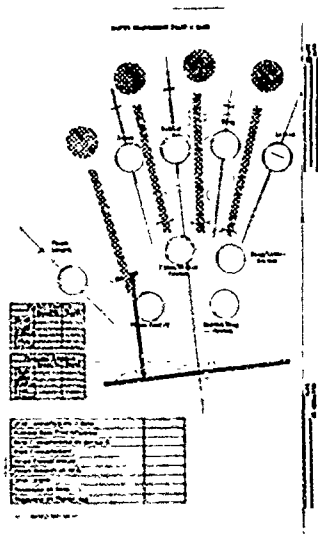
Skewness: 0.02

Sample Size: 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—4.35 in.  | 60—5.20 in. |
| 2—4.41 in.  | 70—5.29 in. |
| 3—4.46 in.  | 75—5.34 in. |
| 5—4.53 in.  | 80—5.39 in. |
| 10—4.66 in. | 85—5.45 in. |
| 15—4.76 in. | 90—5.54 in. |
| 20—4.83 in. | 95—5.68 in. |
| 25—4.89 in. | 97—5.80 in. |
| 30—4.94 in. | 98—5.89 in. |
| 40—5.04 in. | 99—6.07 in. |
| 50—5.12 in. |             |

(48)



## CROTCH 1 HEIGHT

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the level of hand crotch 1.



**MEAN:** 2.25 in.; 5.72 cm  
**STANDARD DEVIATION:** 0.22 in.; 0.56 cm  
**5th PERCENTILE:** 1.91 in.; 4.85 cm  
**95th PERCENTILE:** 2.63 in.; 6.69 cm

**Range:** 1.65-2.80 in.

**Coefficient of Variation:** 9.73%

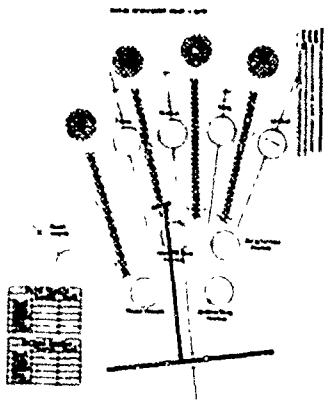
**Kurtosis:** 2.76

**Skewness:** 0.09

**Sample Size:** 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—1.72 in.  | 60—2.30 in. |
| 2—1.81 in.  | 70—2.36 in. |
| 3—1.85 in.  | 75—2.40 in. |
| 5—1.91 in.  | 80—2.44 in. |
| 10—1.99 in. | 85—2.49 in. |
| 15—2.03 in. | 90—2.55 in. |
| 20—2.07 in. | 95—2.63 in. |
| 25—2.10 in. | 97—2.68 in. |
| 30—2.13 in. | 98—2.71 in. |
| 40—2.18 in. | 99—2.73 in. |
| 50—2.24 in. |             |



## CROTCH 2 HEIGHT

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the level of hand crotch 2.



**MEAN: 3.88 in.; 9.86 cm**  
**STANDARD DEVIATION: 0.24 in.; 0.60 cm**  
**5th PERCENTILE: 3.49 in.; 8.87 cm**  
**95th PERCENTILE: 4.27 in.; 10.85 cm**

Range: 3.31-4.65 in.

Coefficient of Variation: 6.03%

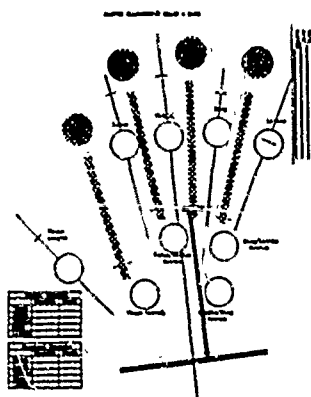
Kurtosis: 3.18

Skewness: 0.16

Sample Size: 211

| Percentiles |             |
|-------------|-------------|
| %           | %           |
| 1—3.37 in.  | 60—3.94 in. |
| 2—3.41 in.  | 70—4.00 in. |
| 3—3.44 in.  | 75—4.03 in. |
| 5—3.49 in.  | 80—4.07 in. |
| 10—3.58 in. | 85—4.12 in. |
| 15—3.64 in. | 90—4.17 in. |
| 20—3.68 in. | 95—4.27 in. |
| 25—3.72 in. | 97—4.34 in. |
| 30—3.76 in. | 98—4.40 in. |
| 40—3.82 in. | 99—4.51 in. |
| 50—3.88 in. |             |





## CROTCH 3 HEIGHT

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the level of hand crotch 3.



**MEAN: 3.86 in.; 9.81 cm**

**STANDARD DEVIATION: 0.23 in.; 0.59 cm**

**5th PERCENTILE: 3.49 in.; 8.86 cm**

**95th PERCENTILE: 4.24 in.; 10.78 cm**

**Range: 3.25-4.72 in.**

**Coefficient of Variation: 6.04%**

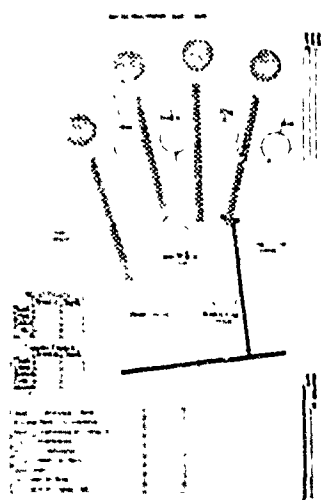
**Kurtosis: 3.72**

**Skewness: 0.35**

**Sample Size: 211**

### Percentiles

| %  |          | %  |          |
|----|----------|----|----------|
| 1  | 3.38 in. | 60 | 3.92 in. |
| 2  | 3.42 in. | 70 | 3.98 in. |
| 3  | 3.44 in. | 75 | 4.01 in. |
| 5  | 3.49 in. | 80 | 4.05 in. |
| 10 | 3.56 in. | 85 | 4.09 in. |
| 15 | 3.62 in. | 90 | 4.15 in. |
| 20 | 3.66 in. | 95 | 4.24 in. |
| 25 | 3.70 in. | 97 | 4.31 in. |
| 30 | 3.74 in. | 98 | 4.36 in. |
| 40 | 3.80 in. | 99 | 4.45 in. |
| 50 | 3.86 in. |    |          |



## CROTCH 4 HEIGHT

Measured on the data blank, the perpendicular distance from the wrist crease baseline to the level of hand crotch 4.



**MEAN: 3.43 in.; 8.72 cm**

**STANDARD DEVIATION: 0.24 in.; 0.60 cm**

**5th PERCENTILE: 3.02 in.; 7.67 cm**

**95th PERCENTILE: 3.81 in.; 9.67 cm**

Range: 2.76-4.06 in.

Coefficient of Variation: 6.91%

Kurtosis: 2.97

Skewness: -0.09

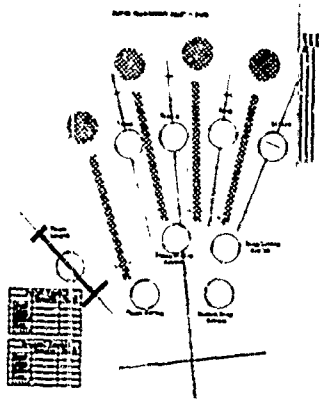
Sample Size: 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—2.89 in.  | 60—3.50 in. |
| 2—2.93 in.  | 70—3.56 in. |
| 3—2.97 in.  | 75—3.59 in. |
| 5—3.02 in.  | 80—3.63 in. |
| 10—3.11 in. | 85—3.67 in. |
| 15—3.18 in. | 90—3.72 in. |
| 20—3.23 in. | 95—3.81 in. |
| 25—3.27 in. | 97—3.87 in. |
| 30—3.31 in. | 98—3.92 in. |
| 40—3.38 in. | 99—4.02 in. |
| 50—3.44 in. |             |

# DIGIT 1 LENGTH;

FINGERTIP TO CROTCH LEVEL



Measured on the data blank, the distance along the axis of digit 1 from the midpoint of the tip of digit 1 to the level of hand crotch 1.



**MEAN:** 2.12 in.; 5.37 cm

**STANDARD DEVIATION:** 0.17 in.; 0.44 cm

**5th PERCENTILE:** 1.84 in.; 4.68 cm

**95th PERCENTILE:** 2.41 in.; 6.12 cm

**Range:** 1.77-2.76 in.

**Coefficient of Variation:** 8.23%

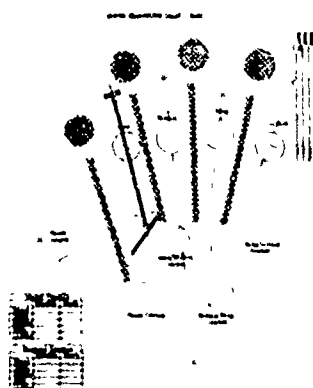
**Kurtosis:** 3.03

**Skewness:** 0.36

**Sample Size:** 211

## Percentiles

| %           | %           |
|-------------|-------------|
| 1—1.77 in.  | 60—2.15 in. |
| 2—1.80 in.  | 70—2.21 in. |
| 3—1.82 in.  | 75—2.24 in. |
| 5—1.84 in.  | 80—2.27 in. |
| 10—1.89 in. | 85—2.30 in. |
| 15—1.93 in. | 90—2.35 in. |
| 20—1.96 in. | 95—2.41 in. |
| 25—1.99 in. | 97—2.45 in. |
| 30—2.01 in. | 98—2.47 in. |
| 40—2.06 in. | 99—2.50 in. |
| 50—2.11 in. |             |



## DIGIT 2 LENGTH;

FINGERTIP TO CROTCH LEVEL

Measured on the data blank, the distance along the axis of digit 2 from the midpoint of the tip of digit 2 to the level of hand crotch 2.



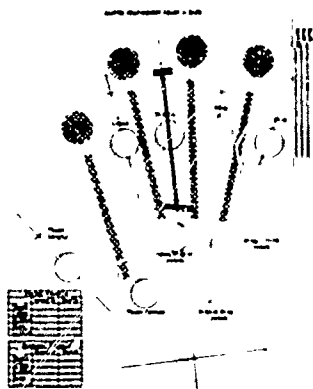
MEAN: 2.72 in.; 6.90 cm

STANDARD DEVIATION: 0.20 in.; 0.52 cm

5th PERCENTILE: 2.40 in.; 6.10 cm

95th PERCENTILE: 3.07 in.; 7.80 cm

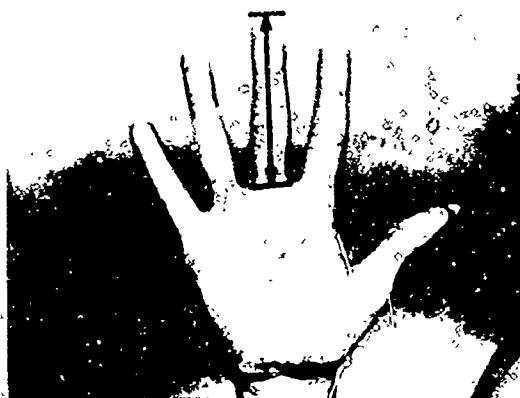
|                           |               | Percentiles |             |
|---------------------------|---------------|-------------|-------------|
|                           |               | %           | %           |
| Range:                    | 2.05-3.23 in. | 1—2.13 in.  | 60—2.75 in. |
| Coefficient of Variation: | 7.52%         | 2—2.26 in.  | 70—2.81 in. |
| Kurtosis:                 | 3.64          | 3—2.33 in.  | 75—2.84 in. |
| Skewness:                 | -0.17         | 5—2.40 in.  | 80—2.88 in. |
|                           |               | 10—2.49 in. | 85—2.93 in. |
|                           |               | 15—2.54 in. | 90—2.99 in. |
|                           |               | 20—2.57 in. | 95—3.07 in. |
|                           |               | 25—2.60 in. | 97—3.12 in. |
|                           |               | 30—2.62 in. | 98—3.15 in. |
|                           |               | 40—2.66 in. | 99—3.19 in. |
|                           |               | 50—2.71 in. |             |
| Sample Size:              | 211           |             |             |



## DIGIT 3 LENGTH;

FINGERTIP TO CROTCH LEVEL

Measured on the data blank, the distance along the axis of digit 3 from the midpoint of the tip of digit 3 to the average level of hand crotch 2-3.



**MEAN:** 3.07 in.; 7.79 cm

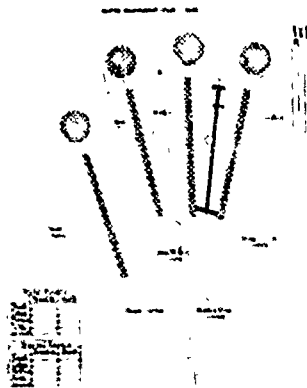
**STANDARD DEVIATION:** 0.20 in.; 0.51 cm

**5th PERCENTILE:** 2.76 in.; 7.01 cm

**95th PERCENTILE:** 3.42 in.; 8.68 cm

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|                           |               | Percentiles |             |
|---------------------------|---------------|-------------|-------------|
| Range:                    | 2.40-3.54 in. | %           | %           |
| Coefficient of Variation: | 6.49%         | 1—2.51 in.  | 60—3.11 in. |
| Kurtosis:                 | 3.56          | 2—2.63 in.  | 70—3.16 in. |
| Skewness:                 | -0.20         | 3—2.69 in.  | 75—3.20 in. |
|                           |               | 5—2.76 in.  | 80—3.23 in. |
|                           |               | 10—2.84 in. | 85—3.28 in. |
|                           |               | 15—2.89 in. | 90—3.34 in. |
|                           |               | 20—2.92 in. | 95—3.42 in. |
|                           |               | 25—2.95 in. | 97—3.46 in. |
|                           |               | 30—2.97 in. | 98—3.49 in. |
| Sample Size: 211          |               | 40—3.02 in. | 99—3.53 in. |
|                           |               | 50—3.06 in. |             |



## DIGIT 4 LENGTH;

FINGERTIP TO CROTCH LEVEL

Measured on the data blank, the distance along the axis of digit 4 from the midpoint of the tip of digit 4 to the average level of hand crotch 3-4.



**MEAN:** 2.88 in.; 7.31 cm

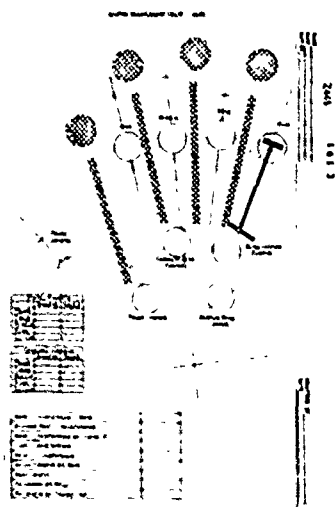
**STANDARD DEVIATION:** 0.20 in.; 0.52 cm

**5th PERCENTILE:** 2.57 in.; 6.52 cm

**95th PERCENTILE:** 3.24 in.; 8.22 cm

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|                           |               | Percentiles |             |
|---------------------------|---------------|-------------|-------------|
| Range:                    | 2.17-3.43 in. | %           | %           |
| Coefficient of Variation: | 7.05%         | 1—2.25 in.  | 60—2.91 in. |
|                           |               | 2—2.41 in.  | 70—2.96 in. |
| Kurtosis:                 | 4.15          | 3—2.48 in.  | 75—3.00 in. |
|                           |               | 5—2.57 in.  | 80—3.03 in. |
| Skewness:                 | -0.21         | 10—2.66 in. | 85—3.08 in. |
|                           |               | 15—2.71 in. | 90—3.14 in. |
| Sample Size: 211          |               | 20—2.74 in. | 95—3.24 in. |
|                           |               | 25—2.77 in. | 97—3.29 in. |
|                           |               | 30—2.79 in. | 98—3.33 in. |
|                           |               | 40—2.83 in. | 99—3.38 in. |
|                           |               | 50—2.87 in. |             |



## DIGIT 5 LENGTH;

FINGERTIP TO CROTCH LEVEL

Measured on the data blank, the distance along the axis of digit 5 from the midpoint of the tip of digit 5 to the level of hand crotch 4.



**MEAN:** 2.15 in.; 5.46 cm

**STANDARD DEVIATION:** 0.17 in.; 0.44 cm

**5th PERCENTILE:** 1.89 in.; 4.80 cm

**95th PERCENTILE:** 2.46 in.; 6.24 cm

**Range:** 1.57-2.60 in.

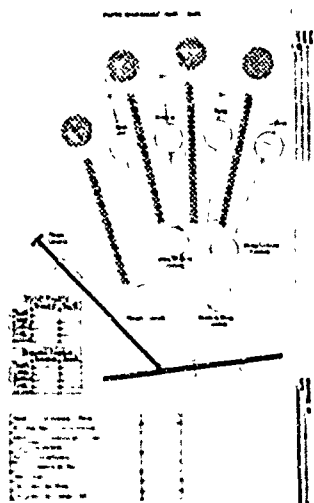
**Coefficient of Variation:** 8.06%

**Kurtosis:** 3.12

**Skewness:** 0.06

**Sample Size:** 211

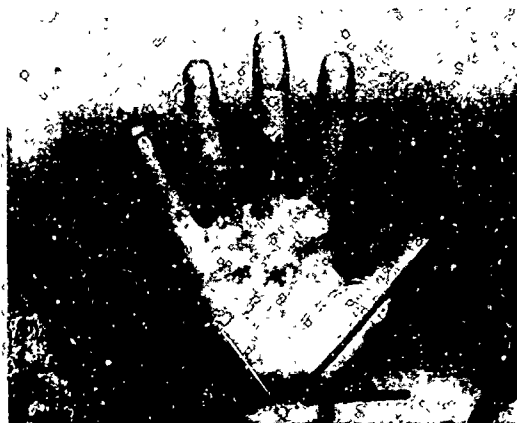
| Percentiles |             |
|-------------|-------------|
| %           | %           |
| 1—1.78 in.  | 60—2.19 in. |
| 2—1.83 in.  | 70—2.24 in. |
| 3—1.85 in.  | 75—2.27 in. |
| 5—1.89 in.  | 80—2.30 in. |
| 10—1.94 in. | 85—2.34 in. |
| 15—1.97 in. | 90—2.39 in. |
| 20—2.00 in. | 95—2.46 in. |
| 25—2.03 in. | 97—2.49 in. |
| 30—2.05 in. | 98—2.52 in. |
| 40—2.10 in. | 99—2.55 in. |
| 50—2.14 in. |             |



## DIGIT 1 LENGTH;

TOTAL, TIP TO WRIST CREASE

Measured on the data blank, the distance along the axis of digit 1 from the midpoint of the tip of digit 1 to the wrist crease baseline.



**MEAN: 4.35 in.; 11.05 cm**

**STANDARD DEVIATION: 0.40 in.; 1.00 cm**

**5th PERCENTILE: 3.75 in.; 9.53 cm**

**95th PERCENTILE: 5.05 in.; 12.83 cm**

Range: 3.43-5.31 in.

Coefficient of Variation: 9.07%

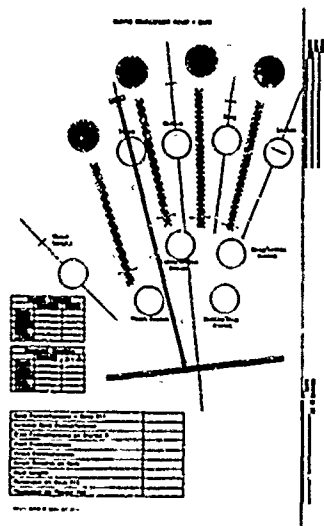
Kurtosis: 2.56

Skewness: 0.20

Sample Size: 211

| Percentiles |             |
|-------------|-------------|
| %           | %           |
| 1—3.52 in.  | 60—4.43 in. |
| 2—3.62 in.  | 70—4.56 in. |
| 3—3.67 in.  | 75—4.62 in. |
| 5—3.75 in.  | 80—4.70 in. |
| 10—3.86 in. | 85—4.79 in. |
| 15—3.94 in. | 90—4.90 in. |
| 20—4.00 in. | 95—5.05 in. |
| 25—4.06 in. | 97—5.13 in. |
| 30—4.12 in. | 98—5.19 in. |
| 40—4.22 in. | 99—5.25 in. |
| 50—4.32 in. |             |





## DIGIT 2 LENGTH;

TOTAL, TIP TO WRIST CREASE

Measured on the data blank, the distance along the axis of digit 2 from the midpoint of the tip of digit 2 to the wrist crease baseline.



**MEAN: 6.56 in.; 16.67 cm**

**STANDARD DEVIATION: 0.35 in.; 0.89 cm**

**5th PERCENTILE: 5.99 in.; 15.21 cm**

**95th PERCENTILE: 7.14 in.; 18.14 cm**

**Range: 5.79-7.68 in.**

**Coefficient of Variation: 5.38%**

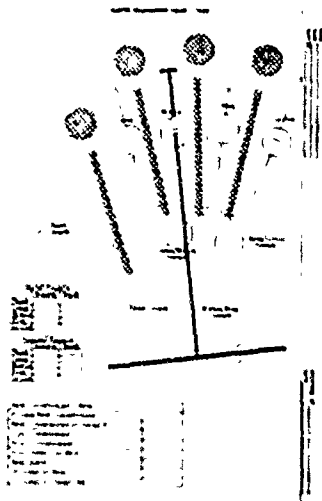
**Kurtosis: 2.75**

**Skewness: 0.12**

**Sample Size: 211**

### Percentiles

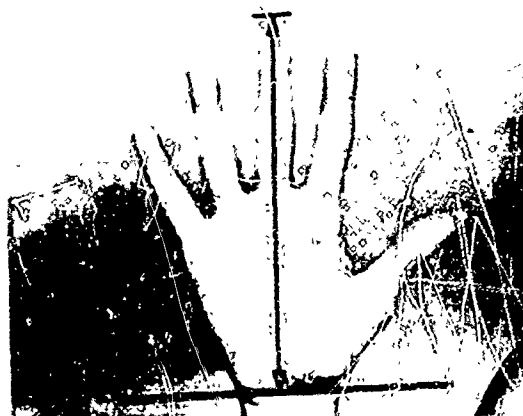
| %           | %           |
|-------------|-------------|
| 1—5.81 in.  | 60—6.66 in. |
| 2—5.87 in.  | 70—6.75 in. |
| 3—5.92 in.  | 75—6.81 in. |
| 5—5.99 in.  | 80—6.87 in. |
| 10—6.10 in. | 85—6.94 in. |
| 15—6.19 in. | 90—7.02 in. |
| 20—6.25 in. | 95—7.14 in. |
| 25—6.32 in. | 97—7.22 in. |
| 30—6.37 in. | 98—7.28 in. |
| 40—6.47 in. | 99—7.37 in. |
| 50—6.56 in. |             |



## DIGIT 3 LENGTH;

TOTAL, TIP TO WRIST CREASE

Measured on the data blank, the distance along the axis of digit 3 from the midpoint of the tip of digit 3 to the wrist crease baseline.



**MEAN:** 6.95 in.; 17.65 cm

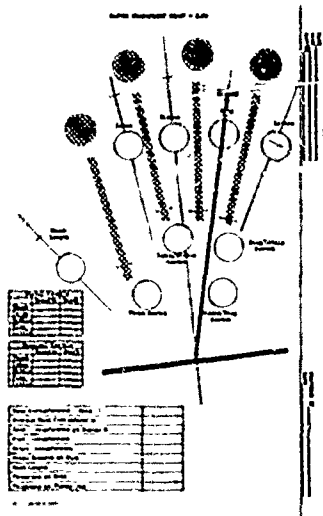
**STANDARD DEVIATION:** 0.34 in.; 0.87 cm

**5th PERCENTILE:** 6.38 in.; 16.22 cm

**95th PERCENTILE:** 7.50 in.; 19.05 cm

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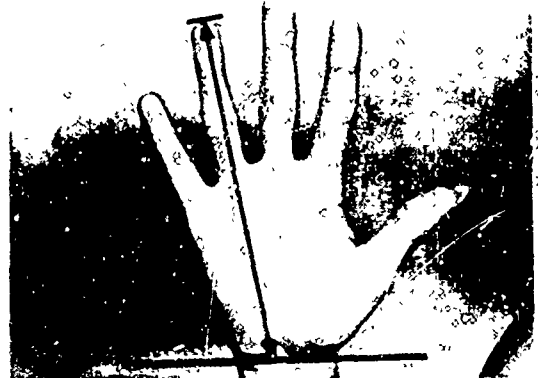
|                           |               | Percentiles |             |
|---------------------------|---------------|-------------|-------------|
| Range:                    | 6.06-7.95 in. | %           | %           |
| Coefficient of Variation: | 4.93%         | 1—6.21 in.  | 60—7.04 in. |
|                           |               | 2—6.27 in.  | 70—7.14 in. |
| Kurtosis:                 | 2.65          | 3—6.32 in.  | 75—7.20 in. |
|                           |               | 5—6.38 in.  | 80—7.25 in. |
| Skewness:                 | 0.01          | 10—6.50 in. | 85—7.32 in. |
|                           |               | 15—6.58 in. | 90—7.40 in. |
| Sample Size:              | 211           | 20—6.64 in. | 95—7.50 in. |
|                           |               | 25—6.70 in. | 97—7.55 in. |
|                           |               | 30—6.76 in. | 98—7.59 in. |
|                           |               | 40—6.86 in. | 99—7.63 in. |
|                           |               | 50—6.95 in. |             |



## DIGIT 4 LENGTH:

TOTAL, TIP TO WRIST CREASE

Measured on the data blank, the distance along the axis of digit 4 from the midpoint of the tip of digit 4 to the wrist crease baseline.



**MEAN:** 6.60 in.; 16.76 cm

**STANDARD DEVIATION:** 3.52 in.; 8.94 cm

**5th PERCENTILE:** 6.02 in.; 15.28 cm

**95th PERCENTILE:** 7.17 in.; 18.20 cm

**Range:** 5.75-7.68 in.

**Coefficient of Variation:** 5.34%

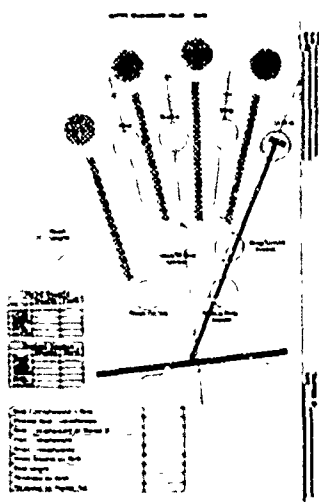
**Kurtosis:** 2.94

**Skewness:** 0.05

**Sample Size:** 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—5.82 in.  | 60—6.69 in. |
| 2—5.89 in.  | 70—6.79 in. |
| 3—5.94 in.  | 75—6.85 in. |
| 5—6.02 in.  | 80—6.91 in. |
| 10—6.14 in. | 85—6.97 in. |
| 15—6.22 in. | 90—7.05 in. |
| 20—6.29 in. | 95—7.17 in. |
| 25—6.35 in. | 97—7.23 in. |
| 30—6.41 in. | 98—7.28 in. |
| 40—6.51 in. | 99—7.34 in. |
| 50—6.60 in. |             |



## DIGIT 5 LENGTH;

TOTAL, TIP TO WRIST CREASE

Measured on the data blank, the distance along the axis of digit 5 from the midpoint of the tip of digit 5 to the wrist crease baseline.



**MEAN: 5.76 in.; 14.64 cm**

**STANDARD DEVIATION: 0.36 in.; 0.92 cm**

**5th PERCENTILE: 5.16 in.; 13.11 cm**

**95th PERCENTILE: 6.35 in.; 16.12 cm**

Range: 4.84-6.89 in.

Coefficient of Variation: 6.26%

Kurtosis: 3.05

Skewness: 0.11

Sample Size: 211

### Percentiles

| %           | %           |
|-------------|-------------|
| 1—5.00 in.  | 60—5.86 in. |
| 2—5.05 in.  | 70—5.96 in. |
| 3—5.09 in.  | 75—6.01 in. |
| 5—5.16 in.  | 80—6.06 in. |
| 10—5.29 in. | 85—6.13 in. |
| 15—5.38 in. | 90—6.21 in. |
| 20—5.46 in. | 95—6.35 in. |
| 25—5.52 in. | 97—6.45 in. |
| 30—5.58 in. | 98—6.53 in. |
| 40—5.68 in. | 99—6.69 in. |
| 50—5.78 in. |             |

## SECTION V

### IDENTIFICATION AND COMPARISON OF THE SAMPLE

#### SAMPLE BY RANK AND CORPS

| <i>Rank</i>            | <i>WAF</i> | <i>Nurse Corps</i> | <i>BSC</i> | <i>Total #</i> |
|------------------------|------------|--------------------|------------|----------------|
| Airman Basic           | 53         | —                  | —          | 53             |
| Airman Second Class    | 6          | —                  | —          | 6              |
| Airman First Class     | 26         | —                  | —          | 26             |
| Sergeant               | 27         | —                  | —          | 27             |
| Staff Sergeant         | 2          | —                  | —          | 2              |
| Technical Sergeant     | —          | —                  | —          | —              |
| Master Sergeant        | 1          | —                  | —          | 1              |
| Senior Master Sergeant | 1          | —                  | —          | 1              |
| Officer Candidate      | 14         | —                  | —          | 14             |
| Second Lieutenant      | 8          | 19                 | —          | 27             |
| First Lieutenant       | 3          | 23                 | —          | 26             |
| Captain                | 1          | 11                 | —          | 12             |
| Major                  | —          | 7                  | 1          | 8              |
| Lieutenant Colonel     | —          | 7                  | —          | 7              |
| Colonel                | —          | 1                  | —          | 1              |
|                        | <u>142</u> | <u>68</u>          | <u>1</u>   | <u>211</u>     |

*Note:* Nurse Corps Ratings include;  
 Flight Nurse—2 Capts., 4 Majs., 2 L/Cs.  
 Senior Flight Nurse—1 L/C.  
 Aerospace Nurse—1 Maj.

*Note:* The Nurse Corps and Biomedical Science Corps are composed entirely of Commissioned Officers.

# SAMPLE BY AGE AND CORPS

| <i>Age</i> | <i>WAF</i> | <i>Nurse Corps</i> | <i>BSC</i> | <i>Total #</i> |
|------------|------------|--------------------|------------|----------------|
| 18         | 28         | —                  | —          | 28             |
| 19         | 22         | —                  | —          | 22             |
| 20         | 23         | —                  | —          | 23             |
| 21         | 17         | 3                  | —          | 20             |
| 22         | 12         | 5                  | —          | 17             |
| 23         | 13         | 13                 | —          | 26             |
| 24         | 10         | 8                  | —          | 18             |
| 25         | 6          | 6                  | —          | 12             |
| 26         | 4          | —                  | —          | 4              |
| 27         | 2          | 1                  | —          | 3              |
| 28         | —          | 5                  | —          | 5              |
| 29         | —          | 2                  | —          | 2              |
| 30         | —          | 2                  | —          | 2              |
| 31         | —          | 1                  | —          | 1              |
| 32         | —          | 2                  | —          | 2              |
| 33         | 2          | 1                  | —          | 3              |
| 34         | 1          | 1                  | —          | 2              |
| 35         | —          | 1                  | —          | 1              |
| 36         | 1          | 2                  | —          | 3              |
| 37         | —          | —                  | 1          | 1              |
| 38         | —          | 1                  | —          | 1              |
| 39         | —          | 1                  | —          | 1              |
| 40         | —          | 4                  | —          | 4              |
| 41         | —          | —                  | —          | 0              |
| 42         | —          | 1                  | —          | 1              |
| 43         | 1          | 1                  | —          | 2              |
| 44         | —          | —                  | —          | 0              |
| 45         | —          | 2                  | —          | 2              |
| 46-56      | —          | 5                  | —          | 5              |
|            | <u>142</u> | <u>68</u>          | <u>1</u>   | <u>211</u>     |

## COMPARISON OF SELECTED SUMMARY STATISTICS

### WITHIN AGE GROUP 21-30

Sample of 46 in Nurse Corps (100% Commissioned)

Sample of 63 in WAF (38% Commissioned)

| <i>Dimension</i>                                | <i>Corps</i> | <i>Mean</i> | <i>S.D.</i> |
|---|--------------|-------------|-------------|
| Hand Length                                     | Nurse        | 7.10 in.    | 0.34 in.    |
|   | WAF          | 7.05 in.    | 0.34 in.    |
| Hand Breadth; Meta                              | Nurse        | 3.06 in.    | 0.14 in.    |
|   | WAF          | 3.01 in.    | 0.15 in.    |
| Hand Circumference;<br>Metacarpale              | Nurse        | 7.37 in.    | 0.31 in.    |
|   | WAF          | 7.33 in.    | 0.33 in.    |
| Fist Circumference                              | Nurse        | 9.86 in.    | 0.48 in.    |
|   | WAF          | 9.63 in.    | 0.50 in.    |
| Wrist Circumference                             | Nurse        | 5.92 in.    | 0.28 in.    |
|   | WAF          | 5.86 in.    | 0.28 in.    |
| Hand Thickness; Meta III                        | Nurse        | 1.09 in.    | 0.07 in.    |
|   | WAF          | 1.07 in.    | 0.07 in.    |
| Hand Depth; Thenar Pad                          | Nurse        | 2.08 in.    | 0.14 in.    |
|   | WAF          | 2.00 in.    | 0.16 in.    |
| Digit 3 Circumference;<br>Distal Interph. Jt.   | Nurse        | 1.78 in.    | 0.09 in.    |
|   | WAF          | 1.75 in.    | 0.10 in.    |
| Digit 3 Circumference;<br>Proximal Interph. Jt. | Nurse        | 2.19 in.    | 0.12 in.    |
|   | WAF          | 2.15 in.    | 0.11 in.    |
| Wrist Breadth                                   | Nurse        | 2.29 in.    | 0.11 in.    |
|   | WAF          | 2.29 in.    | 0.13 in.    |
| Crotch 3 Height                                 | Nurse        | 3.88 in.    | 0.22 in.    |
|   | WAF          | 3.86 in.    | 0.26 in.    |
| Stature   | Nurse        | 64.45 in.   | 2.58 in.    |
|   | WAF          | 64.14 in.   | 2.49 in.    |
| Weight  | Nurse        | 134.43 lbs  | 9.20 lbs    |
|   | WAF          | 126.40 lbs  | 7.71 lbs    |

Although the differences of the means for each dimension between Corps are small, the probability of one group being so consistently larger, using the Sign Test (ref. Siegel, 3, 1956), is  $p < .001$ . Thus, the Null hypothesis being rejected, age 21-30 Nurses have slightly larger hands than the same age group WAF.

## SUMMARY STATISTICS BY AGE GROUP

| <i>Dimension</i>  | <i>Age Group</i>    | <i>Mean</i> | <i>S.D.</i> |
|---|---------------------|-------------|-------------|
| Hand-Length   | < 20 years (N=73)   | 6.98 in.    | 0.31 in.    |
|   | 21-30 years (N=109) | 7.08 in.    | 0.34 in.    |
|   | > 31 years (N=29)   | 7.22 in.    | 0.32 in.    |
| Hand Breadth; Meta.   | < 20 years (N=73)   | 3.00 in.    | 0.14 in.    |
|   | 21-30 years (N=109) | 3.03 in.    | 0.15 in.    |
|   | > 31 years (N=29)   | 3.12 in.    | 0.13 in.    |
| Hand Circumference;<br>Metacarpale                          | < 20 years (N=73)   | 7.31 in.    | 0.20 in.    |
|   | 21-30 years (N=109) | 7.35 in.    | 0.32 in.    |
|   | > 31 years (N=29)   | 7.57 in.    | 0.34 in.    |
| Fist Circumference  | < 20 years (N=73)   | 9.69 in.    | 0.46 in.    |
|   | 21-30 years (N=109) | 9.72 in.    | 0.50 in.    |
|   | > 31 years (N=29)   | 10.21 in.   | 0.48 in.    |
| Hand Circumference:<br>Minimum, Meta.                       | < 20 years (N=73)   | 8.39 in.    | 0.47 in.    |
|   | 21-30 years (N=109) | 8.44 in.    | 0.48 in.    |
|   | > 31 years (N=29)   | 8.63 in.    | 0.49 in.    |
| Hand Circumference:<br>Fingertips Even                      | < 20 years (N=73)   | 8.83 in.    | 0.45 in.    |
|   | 21-30 years (N=109) | 8.89 in.    | 0.46 in.    |
|   | > 31 years (N=29)   | 9.12 in.    | 0.40 in.    |
| Wrist Circumference   | < 20 years (N=73)   | 5.85 in.    | 0.26 in.    |
|   | 21-30 years (N=109) | 5.89 in.    | 0.28 in.    |
|   | > 31 years (N=29)   | 6.07 in.    | 0.27 in.    |
| Hand Thickness;<br>Metacarpale III                          | < 20 years (N=73)   | 1.09 in.    | 0.07 in.    |
|   | 21-30 years (N=109) | 1.08 in.    | 0.07 in.    |
|   | > 31 years (N=29)   | 1.12 in.    | 0.08 in.    |
| Hand Depth; Thenar Pad                                      | < 20 years (N=73)   | 2.01 in.    | 0.15 in.    |
|   | 21-30 years (N=109) | 2.03 in.    | 0.16 in.    |
|   | > 31 years (N=29)   | 2.10 in.    | 0.12 in.    |
| Digit 1 Circumference;<br>Interphalangeal Joint             | < 20 years (N=73)   | 2.17 in.    | 0.11 in.    |
|   | 21-30 years (N=109) | 2.21 in.    | 0.13 in.    |
|   | > 31 years (N=29)   | 2.31 in.    | 0.14 in.    |
| Digit 2 Circumference;<br>Distal Interphalangeal<br>Joint   | < 20 years (N=73)   | 1.72 in.    | 0.08 in.    |
|   | 21-30 years (N=109) | 1.75 in.    | 0.10 in.    |
|   | > 31 years (N=29)   | 1.85 in.    | 0.11 in.    |
| Digit 2 Circumference;<br>Proximal Interphalangeal<br>Joint | < 20 years (N=73)   | 2.10 in.    | 0.09 in.    |
|   | 21-30 years (N=109) | 2.12 in.    | 0.12 in.    |
|   | > 31 years (N=29)   | 2.22 in.    | 0.11 in.    |



| <i>Dimension</i>  | <i>Age Group</i>    | <i>Mean</i> | <i>S.D.</i> |
|---|---------------------|-------------|-------------|
| Digit 3 Circumference;<br>Distal Interphalangeal<br>Joint   | < 20 years (N=73)   | 1.74 in.    | 0.09 in.    |
|   | 21-30 years (N=109) | 1.74 in.    | 0.10 in.    |
|   | > 31 years (N=29)   | 1.84 in.    | 0.11 in.    |
| Digit 3 Circumference;<br>Proximal Interphalangeal<br>Joint | < 20 years (N=73)   | 2.13 in.    | 0.08 in.    |
|   | 21-30 years (N=109) | 2.17 in.    | 0.11 in.    |
|   | > 31 years (N=29)   | 2.25 in.    | 0.12 in.    |
| Digit 4 Circumference;<br>Distal Interphalangeal<br>Joint   | < 20 years (N=73)   | 1.64 in.    | 0.09 in.    |
|   | 21-30 years (N=109) | 1.66 in.    | 0.09 in.    |
|   | > 31 years (N=29)   | 1.74 in.    | 0.10 in.    |
| Digit 4 Circumference;<br>Proximal Interphalangeal<br>Joint | < 20 years (N=73)   | 1.99 in.    | 0.09 in.    |
|   | 21-30 years (N=109) | 2.01 in.    | 0.11 in.    |
|   | > 31 years (N=29)   | 2.07 in.    | 0.12 in.    |
| Digit 5 Circumference;<br>Distal Interphalangeal<br>Joint   | < 20 years (N=73)   | 1.50 in.    | 0.08 in.    |
|   | 21-30 years (N=109) | 1.51 in.    | 0.08 in.    |
|   | > 31 years (N=29)   | 1.61 in.    | 0.11 in.    |
| Wrist Breadth   | < 20 years (N=73)   | 2.28 in.    | 0.12 in.    |
|   | 21-30 years (N=109) | 2.29 in.    | 0.12 in.    |
|   | > 31 years (N=29)   | 2.36 in.    | 0.14 in.    |
| Digit 1 Height;<br>Perpendicular to<br>Wrist Crease         | < 20 years (N=73)   | 3.34 in.    | 0.31 in.    |
|   | 21-30 years (N=109) | 3.43 in.    | 0.34 in.    |
|   | > 31 years (N=29)   | 3.46 in.    | 0.32 in.    |
| Digit 2 Height;<br>Perpendicular to<br>Wrist Crease         | < 20 years (N=73)   | 6.38 in.    | 0.32 in.    |
|   | 21-30 years (N=109) | 6.49 in.    | 0.37 in.    |
|   | > 31 years (N=29)   | 6.60 in.    | 0.35 in.    |
| Digit 3 Height;<br>Perpendicular to<br>Wrist Crease         | < 20 years (N=73)   | 6.86 in.    | 0.32 in.    |
|   | 21-30 years (N=109) | 6.95 in.    | 0.35 in.    |
|   | > 31 years (N=29)   | 7.12 in.    | 0.31 in.    |
| Digit 4 Height;<br>Perpendicular to<br>Wrist Crease         | < 20 years (N=73)   | 6.36 in.    | 0.34 in.    |
|   | 21-30 years (N=109) | 6.45 in.    | 0.34 in.    |
|   | > 31 years (N=29)   | 6.62 in.    | 0.33 in.    |
| Digit 5 Height;<br>Perpendicular to<br>Wrist Crease         | < 20 years (N=73)   | 5.05 in.    | 0.33 in.    |
|   | 21-30 years (N=109) | 5.11 in.    | 0.35 in.    |
|   | > 31 years (N=29)   | 5.32 in.    | 0.33 in.    |
| Crotch 1 Height   | < 20 years (N=73)   | 2.18 in.    | 0.18 in.    |
|   | 21-30 years (N=109) | 2.27 in.    | 0.23 in.    |
|   | > 31 years (N=29)   | 2.36 in.    | 0.21 in.    |
| Crotch 2 Height   | < 20 years (N=73)   | 3.31 in.    | 0.21 in.    |
|   | 21-30 years (N=109) | 3.90 in.    | 0.24 in.    |
|   | > 31 years (N=29)   | 3.99 in.    | 0.23 in.    |

| <i>Dimension</i>                                 | <i>Age Group</i>    | <i>Mean</i> | <i>S.D.</i> |
|--|---------------------|-------------|-------------|
| Crotch 3 Height                                  | < 20 years (N=73)   | 3.80 in.    | 0.21 in.    |
|  | 21-30 years (N=109) | 3.87 in.    | 0.24 in.    |
|  | > 31 years (N=29)   | 3.99 in.    | 0.21 in.    |
| 4 Height   | < 20 years (N=73)   | 3.38 in.    | 0.22 in.    |
|  | 21-30 years (N=109) | 3.44 in.    | 0.24 in.    |
|  | > 31 years (N=29)   | 3.56 in.    | 0.21 in.    |
| Digit 1 Length;<br>Fingertip to Crotch<br>Level  | < 20 years (N=73)   | 2.10 in.    | 0.18 in.    |
|  | 21-30 years (N=109) | 2.12 in.    | 0.17 in.    |
|  | > 31 years (N=29)   | 2.14 in.    | 0.15 in.    |
| Digit 2 Length;<br>Fingertip to Crotch<br>Level  | < 20 years (N=73)   | 2.70 in.    | 0.19 in.    |
|  | 21-30 years (N=109) | 2.71 in.    | 0.22 in.    |
|  | > 31 years (N=29)   | 2.75 in.    | 0.20 in.    |
| Digit 3 Length;<br>Fingertip to Crotch<br>Level  | < 20 years (N=73)   | 3.05 in.    | 0.20 in.    |
|  | 21-30 years (N=109) | 3.07 in.    | 0.20 in.    |
|  | > 31 years (N=29)   | 3.13 in.    | 0.17 in.    |
| Digit 4 Length;<br>Fingertip to Crotch<br>Level  | < 20 years (N=73)   | 2.87 in.    | 0.20 in.    |
|  | 21-30 years (N=109) | 2.88 in.    | 0.20 in.    |
|  | > 31 years (N=29)   | 2.89 in.    | 0.21 in.    |
| Digit 5 Length;<br>Fingertip to Crotch<br>Level  | < 20 years (N=73)   | 2.13 in.    | 0.15 in.    |
|  | 21-30 years (N=109) | 2.15 in.    | 0.18 in.    |
|  | > 31 years (N=29)   | 2.19 in.    | 0.19 in.    |
| Digit 1 Length;<br>Total, Tip to<br>Wrist Crease | < 20 years (N=73)   | 4.26 in.    | 0.35 in.    |
|  | 21-30 years (N=109) | 4.38 in.    | 0.41 in.    |
|  | > 31 years (N=29)   | 4.47 in.    | 0.40 in.    |
| Digit 2 Length;<br>Total, Tip to<br>Wrist Crease | < 20 years (N=73)   | 6.47 in.    | 0.31 in.    |
|  | 21-30 years (N=109) | 6.59 in.    | 0.36 in.    |
|  | > 31 years (N=29)   | 6.71 in.    | 0.35 in.    |
| Digit 3 Length;<br>Total, Tip to<br>Wrist Crease | < 20 years (N=73)   | 6.86 in.    | 0.32 in.    |
|  | 21-30 years (N=109) | 6.96 in.    | 0.35 in.    |
|  | > 31 years (N=29)   | 7.12 in.    | 0.31 in.    |
| Digit 4 Length;<br>Total, Tip to<br>Wrist Crease | < 20 years (N=73)   | 6.51 in.    | 0.34 in.    |
|  | 21-30 years (N=109) | 6.62 in.    | 0.35 in.    |
|  | > 31 years (N=29)   | 6.76 in.    | 0.33 in.    |
| Digit 5 Length;<br>Total, Tip to<br>Wrist Crease | < 20 years (N=73)   | 5.68 in.    | 0.31 in.    |
|  | 21-30 years (N=109) | 5.76 in.    | 0.37 in.    |
|  | > 31 years (N=29)   | 5.97 in.    | 0.39 in.    |

## **SECTION VI**

### **CORRELATION MATRIX FOR ALL VARIABLES**

# CORRELATION MATRIX FOR FEMALE HANDS

|                         | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| 1 HAND LENGTH           |      | .569 | .564 | .401 | .574 | .610 | .543 | .269 | .351 | .408 |
| 2 HAND BREADTH, META    | .569 |      | .894 | .710 | .759 | .771 | .728 | .427 | .454 | .535 |
| 3 HAND CIRC, METACARP   | .564 | .894 |      | .747 | .735 | .777 | .740 | .471 | .447 | .547 |
| 4 HAND CIRC, META, MIN  | .401 | .710 | .747 |      | .665 | .663 | .578 | .374 | .448 | .363 |
| 5 HAND CIRC, TIPS EVN   | .574 | .759 | .735 | .665 |      | .776 | .613 | .447 | .474 | .474 |
| 6 FIST CIRCUMFERENCE    | .610 | .771 | .777 | .663 | .776 |      | .662 | .455 | .518 | .549 |
| 7 WRIST CIRCUMFERENCE   | .543 | .728 | .740 | .578 | .613 | .662 |      | .398 | .482 | .521 |
| 8 HAND THICK AT META    | .269 | .427 | .471 | .374 | .447 | .455 | .398 |      | .337 | .397 |
| 9 HAND DPTH, THENAR PAD | .351 | .454 | .447 | .440 | .474 | .518 | .482 | .337 |      | .413 |
| 10 DIG 1 JOINT BRDTH    | .408 | .535 | .547 | .363 | .474 | .549 | .521 | .397 | .413 |      |
| 11 DIGIT 1 JOINT DPTH   | .373 | .549 | .548 | .433 | .474 | .509 | .510 | .387 | .367 | .608 |
| 12 DIGIT 1 JOINT CIRC   | .430 | .608 | .614 | .440 | .526 | .590 | .579 | .442 | .443 | .906 |
| 13 DIG 2 DST JNT BDTH   | .352 | .591 | .558 | .390 | .422 | .530 | .490 | .449 | .345 | .600 |
| 14 DIG 2 DST JNT DPTH   | .251 | .478 | .447 | .372 | .472 | .472 | .483 | .407 | .303 | .496 |
| 15 DIG 2 DST JNT CIRC   | .349 | .613 | .577 | .433 | .499 | .568 | .548 | .434 | .368 | .617 |
| 16 DIG 2 PR JNT BRDTH   | .427 | .616 | .617 | .491 | .535 | .594 | .577 | .425 | .428 | .629 |
| 17 DIG 2 PR JNT DPTH    | .374 | .495 | .502 | .449 | .505 | .598 | .508 | .443 | .420 | .469 |
| 18 DIG 2 PR JNT CIRC    | .445 | .614 | .628 | .522 | .572 | .663 | .600 | .476 | .479 | .623 |
| 19 DIG 3 DST JNT BDTH   | .311 | .558 | .538 | .425 | .465 | .488 | .480 | .460 | .390 | .612 |
| 20 DIG 3 DST JNT DPTH   | .316 | .553 | .534 | .424 | .496 | .501 | .490 | .448 | .329 | .453 |
| 21 DIG 3 DST JNT CIRC   | .351 | .617 | .593 | .460 | .525 | .547 | .541 | .504 | .398 | .602 |
| 22 DIG 3 PR JNT BRDTH   | .367 | .578 | .575 | .509 | .473 | .498 | .551 | .504 | .373 | .519 |
| 23 DIG 3 PR JNT DPTH    | .396 | .526 | .500 | .421 | .490 | .543 | .462 | .349 | .402 | .501 |
| 24 DIG 3 PR JNT CIRC    | .431 | .633 | .615 | .532 | .551 | .597 | .583 | .486 | .451 | .588 |
| 25 DIG 4 DST JNT BDTH   | .335 | .567 | .545 | .401 | .434 | .519 | .493 | .474 | .364 | .568 |
| 26 DIG 4 DST JNT DPTH   | .315 | .534 | .567 | .429 | .520 | .510 | .526 | .438 | .353 | .528 |
| 27 DIG 4 DST JNT CIRC   | .358 | .605 | .603 | .447 | .512 | .566 | .559 | .514 | .389 | .610 |
| 28 DIG 4 PR JNT BRDTH   | .328 | .520 | .509 | .441 | .411 | .461 | .521 | .422 | .370 | .558 |
| 29 DIG 4 PR JNT DPTH    | .318 | .397 | .401 | .392 | .465 | .441 | .358 | .348 | .341 | .382 |
| 30 DIG 4 PR JNT CIRC    | .394 | .559 | .553 | .515 | .533 | .551 | .525 | .461 | .433 | .564 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8     | 9    | 10   |
|-----------------------|------|------|------|------|------|------|------|-------|------|------|
| 31 DIG 5 DST JNT BDTH | .284 | .478 | .489 | .321 | .408 | .550 | .456 | .447  | .320 | .575 |
| 32 DIG 5 DST JNT DPTH | .340 | .489 | .536 | .356 | .439 | .491 | .460 | .381  | .368 | .546 |
| 33 DIG 5 DST JNT CIRC | .330 | .540 | .571 | .378 | .470 | .584 | .514 | .474  | .381 | .628 |
| 34 DIG 5 PR JNT BRDTH | .362 | .512 | .538 | .420 | .460 | .500 | .489 | .460  | .338 | .579 |
| 35 DIG 5 PR JNT DPTH  | .382 | .390 | .433 | .366 | .411 | .459 | .405 | .308  | .342 | .534 |
| 36 DIG 5 PR JNT CIRC  | .448 | .538 | .575 | .461 | .512 | .570 | .536 | .462  | .398 | .654 |
| 37 WRIST BREADTH      | .369 | .582 | .619 | .447 | .553 | .554 | .755 | .400  | .356 | .442 |
| 38 DIGIT 1 HT PERP WC | .604 | .278 | .270 | .242 | .309 | .301 | .241 | -.033 | .206 | .215 |
| 39 DIGIT 2 HT PERP WC | .856 | .529 | .518 | .413 | .554 | .559 | .459 | .190  | .345 | .406 |
| 40 DIGIT 3 HT PERP WC | .950 | .564 | .555 | .408 | .574 | .610 | .511 | .266  | .347 | .441 |
| 41 DIGIT 4 HT PERP WC | .897 | .551 | .543 | .372 | .538 | .608 | .504 | .250  | .342 | .469 |
| 42 DIGIT 5 HT PERP WC | .782 | .474 | .498 | .319 | .449 | .569 | .453 | .235  | .290 | .429 |
| 43 CROTCH 1 HEIGHT    | .569 | .254 | .227 | .155 | .179 | .275 | .203 | -.030 | .153 | .275 |
| 44 CROTCH 2 HEIGHT    | .754 | .402 | .398 | .323 | .416 | .420 | .334 | .072  | .229 | .331 |
| 45 CROTCH 3 HEIGHT    | .748 | .393 | .401 | .308 | .414 | .449 | .345 | .096  | .238 | .351 |
| 46 CROTCH 4 HEIGHT    | .734 | .397 | .419 | .299 | .400 | .457 | .365 | .169  | .252 | .400 |
| 47 DIGIT 1 TIP-CROTCH | .687 | .401 | .384 | .336 | .465 | .466 | .366 | .230  | .350 | .287 |
| 48 DIGIT 2 TIP-CROTCH | .672 | .493 | .475 | .340 | .478 | .530 | .441 | .277  | .341 | .359 |
| 49 DIGIT 3 TIP-CROTCH | .749 | .503 | .483 | .339 | .509 | .547 | .479 | .356  | .335 | .359 |
| 50 DIGIT 4 TIP-CROTCH | .599 | .446 | .414 | .300 | .436 | .480 | .408 | .218  | .268 | .316 |
| 51 DIGIT 5 TIP-CROTCH | .613 | .421 | .438 | .312 | .441 | .496 | .389 | .205  | .280 | .283 |
| 52 DIGIT 1 TIP-WRIST  | .681 | .324 | .310 | .237 | .306 | .371 | .291 | .031  | .263 | .255 |
| 53 DIGIT 2 TIP-WRIST  | .889 | .541 | .525 | .408 | .550 | .581 | .462 | .213  | .353 | .410 |
| 54 DIGIT 3 TIP-WRIST  | .951 | .565 | .555 | .408 | .580 | .614 | .509 | .271  | .350 | .436 |
| 55 DIGIT 4 TIP-WRIST  | .896 | .551 | .541 | .392 | .565 | .599 | .490 | .229  | .344 | .465 |
| 56 DIG 1 JOINT BRDTH  | .800 | .518 | .540 | .393 | .528 | .592 | .472 | .223  | .330 | .446 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   |
|-----------------------|------|------|------|------|------|------|------|------|------|------|
| 1 HAND LENGTH         | .373 | .430 | .352 | .251 | .349 | .427 | .374 | .445 | .311 | .316 |
| 2 HAND BREADTH, META  | .549 | .608 | .591 | .478 | .613 | .616 | .495 | .614 | .558 | .553 |
| 3 HAND CIRC,METACARP  | .548 | .614 | .558 | .447 | .577 | .617 | .502 | .628 | .538 | .534 |
| 4 HAND CIRC,META,MIN  | .433 | .440 | .390 | .372 | .433 | .491 | .449 | .522 | .425 | .424 |
| 5 HAND CIRC,TIPS EVN  | .474 | .526 | .422 | .472 | .499 | .535 | .505 | .572 | .465 | .496 |
| 6 FIST CIRCUMFERENCE  | .509 | .590 | .530 | .472 | .566 | .594 | .598 | .663 | .480 | .501 |
| 7 WRIST CIRCUMF-ENCE  | .510 | .579 | .490 | .483 | .548 | .577 | .508 | .600 | .480 | .490 |
| 8 HAND THICK AT META  | .387 | .442 | .449 | .407 | .484 | .425 | .443 | .476 | .460 | .448 |
| 9 HND DPTH,THEIR PAD  | .367 | .443 | .345 | .303 | .368 | .428 | .420 | .479 | .390 | .329 |
| 10 DIG 1 JOINT BRDTH  | .608 | .906 | .600 | .496 | .617 | .629 | .469 | .623 | .612 | .453 |
| 11 DIGIT 1 JOINT DPTH |      | .879 | .524 | .602 | .630 | .584 | .553 | .649 | .564 | .579 |
| 12 DIGIT 1 JOINT CIRC | .879 |      | .631 | .612 | .696 | .677 | .565 | .708 | .666 | .572 |
| 13 DIG 2 DST JNT BDTH | .524 | .621 |      | .552 | .913 | .686 | .480 | .644 | .727 | .553 |
| 14 DIG 2 DST JNT DPTH | .602 | .612 | .552 |      | .833 | .573 | .589 | .636 | .560 | .749 |
| 15 DIG 2 DST JNT CIRC | .630 | .696 | .913 | .833 |      | .710 | .591 | .716 | .733 | .711 |
| 16 DIG 2 PR JNT BRDTH | .584 | .677 | .686 | .573 | .710 |      | .547 | .882 | .663 | .550 |
| 17 DIG 2 PR JNT DPTH  | .553 | .565 | .480 | .589 | .591 | .547 |      | .849 | .497 | .545 |
| 18 DIG 2 PR JNT CIRC  | .649 | .708 | .644 | .636 | .716 | .862 | .849 |      | .650 | .600 |
| 19 DIG 3 DST JNT BDTH | .564 | .666 | .727 | .560 | .733 | .663 | .497 | .650 |      | .601 |
| 20 DIG 3 DST JNT DPTH | .579 | .572 | .553 | .749 | .711 | .550 | .545 | .600 | .601 |      |
| 21 DIG 3 DST JNT CIRC | .634 | .694 | .722 | .704 | .800 | .681 | .570 | .697 | .919 | .857 |
| 22 DIG 3 PR JNT BRDTH | .532 | .589 | .576 | .530 | .620 | .687 | .467 | .634 | .629 | .569 |
| 23 DIG 3 PR JNT DPTH  | .551 | .585 | .502 | .541 | .582 | .524 | .762 | .713 | .545 | .563 |
| 24 DIG 3 PR JNT CIRC  | .631 | .681 | .633 | .622 | .702 | .700 | .725 | .789 | .680 | .652 |
| 25 DIG 4 DST JNT BDTH | .480 | .596 | .685 | .547 | .702 | .615 | .498 | .615 | .731 | .547 |
| 26 DIG 4 DST JNT DPTH | .542 | .599 | .565 | .645 | .674 | .602 | .501 | .611 | .584 | .690 |
| 27 DIG 4 DST JNT CIRC | .566 | .665 | .708 | .662 | .772 | .675 | .549 | .676 | .751 | .682 |
| 28 DIG 4 PR JNT BRDTH | .505 | .601 | .527 | .494 | .573 | .658 | .491 | .634 | .631 | .510 |
| 29 DIG 4 PR JNT DPTH  | .510 | .484 | .369 | .551 | .498 | .470 | .609 | .601 | .451 | .560 |
| 30 DIG 4 PR JNT CIRC  | .612 | .652 | .526 | .624 | .634 | .670 | .660 | .738 | .643 | .633 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   |
|-----------------------|------|------|------|------|------|------|------|------|------|------|
| 31 DIG 5 DST JNT BDTH | .480 | .591 | .563 | .456 | .577 | .522 | .460 | .549 | .637 | .433 |
| 32 DIG 5 DST JNT DPTH | .557 | .615 | .521 | .555 | .603 | .538 | .465 | .562 | .598 | .659 |
| 33 DIG 5 DST JNT CIRC | .580 | .676 | .610 | .568 | .664 | .594 | .525 | .624 | .699 | .596 |
| 34 DIG 5 PR JNT BRDTH | .446 | .585 | .558 | .500 | .598 | .637 | .441 | .594 | .588 | .510 |
| 35 DIG 5 PR JNT DPTH  | .550 | .591 | .419 | .535 | .528 | .529 | .516 | .588 | .493 | .511 |
| 36 DIG 5 PR JNT CIRC  | .587 | .693 | .583 | .602 | .665 | .591 | .559 | .696 | .641 | .601 |
| 37 WRIST BREADTH      | .502 | .526 | .372 | .488 | .464 | .491 | .492 | .555 | .448 | .510 |
| 38 DIGIT 1 HT PERP WC | .221 | .240 | .198 | .106 | .187 | .254 | .262 | .295 | .162 | .097 |
| 39 DIGIT 2 HT PERP WC | .362 | .428 | .366 | .238 | .357 | .449 | .371 | .462 | .315 | .229 |
| 40 DIGIT 3 HT PERP WC | .406 | .469 | .378 | .270 | .377 | .458 | .374 | .462 | .346 | .306 |
| 41 DIGIT 4 HT PERP WC | .425 | .498 | .369 | .279 | .373 | .444 | .349 | .441 | .342 | .307 |
| 42 DIGIT 5 HT PERP WC | .381 | .453 | .334 | .252 | .332 | .395 | .317 | .392 | .276 | .266 |
| 43 CROTCH 1 HEIGHT    | .225 | .278 | .261 | .079 | .210 | .258 | .202 | .270 | .190 | .081 |
| 44 CROTCH 2 HEIGHT    | .293 | .348 | .257 | .141 | .236 | .359 | .231 | .333 | .248 | .136 |
| 45 CROTCH 3 HEIGHT    | .286 | .353 | .247 | .151 | .230 | .349 | .183 | .292 | .239 | .155 |
| 46 CROTCH 4 HEIGHT    | .296 | .391 | .300 | .180 | .276 | .360 | .196 | .303 | .241 | .194 |
| 47 DIGIT 1 TIP-CROTCH | .297 | .327 | .213 | .208 | .244 | .341 | .354 | .393 | .225 | .227 |
| 48 DIGIT 2 TIP-CROTCH | .322 | .371 | .355 | .281 | .368 | .380 | .389 | .434 | .275 | .306 |
| 49 DIGIT 3 TIP-CROTCH | .371 | .401 | .337 | .286 | .359 | .357 | .390 | .411 | .304 | .349 |
| 50 DIGIT 4 TIP-CROTCH | .336 | .362 | .263 | .254 | .296 | .291 | .317 | .343 | .246 | .289 |
| 51 DIGIT 5 TIP-CROTCH | .324 | .335 | .245 | .230 | .265 | .282 | .338 | .349 | .172 | .229 |
| 52 DIGIT 1 TIP-WRIST  | .264 | .289 | .249 | .131 | .230 | .298 | .289 | .333 | .206 | .161 |
| 53 DIGIT 2 TIP-WRIST  | .370 | .435 | .384 | .250 | .373 | .460 | .376 | .471 | .322 | .262 |
| 54 DIGIT 3 TIP-WRIST  | .408 | .466 | .377 | .271 | .377 | .458 | .376 | .462 | .347 | .313 |
| 55 DIGIT 4 TIP-WRIST  | .410 | .486 | .368 | .279 | .373 | .453 | .366 | .455 | .346 | .297 |
| 56 DIG 3 DST JNT DPTH | .391 | .464 | .355 | .268 | .356 | .429 | .354 | .431 | .310 | .261 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                        | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   |
|------------------------|------|------|------|------|------|------|------|------|------|------|
| 1 HAND LENGTH          | .351 | .367 | .396 | .431 | .335 | .315 | .356 | .328 | .318 | .394 |
| 2 HAND BREADTH, META   | .617 | .578 | .526 | .633 | .567 | .534 | .605 | .520 | .397 | .559 |
| 3 HAND CIRC, METACARP  | .593 | .575 | .500 | .615 | .545 | .567 | .603 | .509 | .401 | .553 |
| 4 HAND CIRC, META, MIN | .460 | .509 | .421 | .533 | .401 | .429 | .447 | .441 | .392 | .515 |
| 5 HAND CIRC, TIPS EVN  | .525 | .473 | .490 | .551 | .434 | .520 | .512 | .411 | .465 | .533 |
| 6 FIST CIRCUMFERENCE   | .547 | .498 | .543 | .597 | .519 | .510 | .566 | .461 | .441 | .551 |
| 7 WRIST CIRCUMF-ENCE   | .541 | .551 | .462 | .583 | .493 | .526 | .559 | .521 | .358 | .525 |
| 8 HAND THICK AT META   | .504 | .504 | .349 | .486 | .474 | .438 | .514 | .422 | .348 | .461 |
| 9 HND DPTH, THENR PAD  | .398 | .373 | .402 | .451 | .364 | .353 | .389 | .370 | .341 | .433 |
| 10 DIG 1 JOINT BRDTH   | .602 | .519 | .501 | .588 | .568 | .528 | .610 | .558 | .382 | .564 |
| 11 DIGIT 1 JOINT DPTH  | .634 | .532 | .551 | .631 | .480 | .542 | .566 | .505 | .510 | .612 |
| 12 DIGIT 1 JOINT CIRC  | .694 | .589 | .585 | .681 | .596 | .599 | .665 | .601 | .484 | .652 |
| 13 DIG 2 DST JNT BDTH  | .722 | .576 | .502 | .633 | .685 | .565 | .708 | .527 | .369 | .526 |
| 14 DIG 2 DST JNT DPTH  | .704 | .530 | .541 | .622 | .547 | .645 | .662 | .494 | .551 | .624 |
| 15 DIG 2 DST JNT CIRC  | .800 | .620 | .582 | .702 | .702 | .674 | .772 | .573 | .498 | .634 |
| 16 DIG 2 PR JNT BRDTH  | .681 | .687 | .524 | .700 | .615 | .602 | .675 | .658 | .470 | .670 |
| 17 DIG 2 PR JNT DPTH   | .570 | .467 | .762 | .725 | .498 | .501 | .549 | .491 | .609 | .660 |
| 18 DIG 2 PR JNT CIRC   | .697 | .634 | .713 | .789 | .615 | .611 | .676 | .634 | .601 | .738 |
| 19 DIG 3 DST JNT BDTH  | .919 | .629 | .545 | .680 | .731 | .584 | .751 | .631 | .451 | .643 |
| 20 DIG 3 DST JNT DPTH  | .857 | .569 | .563 | .652 | .547 | .690 | .682 | .510 | .560 | .633 |
| 21 DIG 3 DST JNT CIRC  |      | .678 | .610 | .744 | .712 | .697 | .793 | .645 | .550 | .709 |
| 22 DIG 3 PR JNT BRDTH  | .678 |      | .475 | .845 | .539 | .529 | .599 | .736 | .449 | .712 |
| 23 DIG 3 PR JNT DPTH   | .610 | .475 |      | .864 | .548 | .527 | .599 | .489 | .713 | .717 |
| 24 DIG 3 PR JNT CIRC   | .744 | .845 | .864 |      | .624 | .607 | .687 | .719 | .672 | .832 |
| 25 DIG 4 DST JNT BDTH  | .712 | .539 | .548 | .624 |      | .571 | .917 | .604 | .373 | .576 |
| 26 DIG 4 DST JNT DPTH  | .697 | .529 | .527 | .607 | .571 |      | .840 | .558 | .485 | .607 |
| 27 DIG 4 DST JNT CIRC  | .793 | .599 | .599 | .687 | .917 | .840 |      | .558 | .469 | .658 |
| 28 DIG 4 PR JNT BRDTH  | .645 | .736 | .89  | .719 | .604 | .558 | .653 |      | .395 | .823 |
| 29 DIG 4 PR JNT DPTH   | .550 | .449 | .713 | .672 | .373 | .485 | .469 | .395 |      | .837 |
| 30 DIG 4 PR JNT CIRC   | .709 | .712 | .717 | .832 | .576 | .607 | .658 | .823 | .837 |      |



# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 21   | 22   | 23   | 24   | 25   | 26   | 27   | 28   | 29   | 30   |
|-----------------------|------|------|------|------|------|------|------|------|------|------|
| 31 DIG 5 DST JNT BDTH | .612 | .463 | .413 | .500 | .678 | .541 | .693 | .449 | .306 | .449 |
| 32 DIG 5 DST JNT DPTH | .693 | .476 | .511 | .572 | .520 | .703 | .668 | .481 | .436 | .536 |
| 33 DIG 5 DST JNT CIRC | .728 | .522 | .514 | .597 | .692 | .684 | .770 | .524 | .405 | .548 |
| 34 DIG 5 PR JNT BRDTH | .619 | .629 | .425 | .611 | .593 | .506 | .630 | .709 | .381 | .650 |
| 35 DIG 5 PR JNT DPTH  | .552 | .463 | .541 | .576 | .427 | .514 | .512 | .411 | .557 | .589 |
| 36 DIG 5 PR JNT CIRC  | .604 | .646 | .565 | .699 | .604 | .602 | .677 | .673 | .541 | .730 |
| 37 WRIST BREADTH      | .523 | .461 | .406 | .499 | .418 | .497 | .493 | .418 | .584 | .480 |
| 38 DIGIT 1 HT PERP WC | .150 | .138 | .294 | .258 | .140 | .152 | .161 | .219 | .207 | .256 |
| 39 DIGIT 2 HT PERP WC | .307 | .304 | .383 | .396 | .319 | .291 | .337 | .325 | .312 | .386 |
| 40 DIGIT 3 HT PERP WC | .368 | .368 | .409 | .441 | .364 | .316 | .379 | .357 | .339 | .425 |
| 41 DIGIT 4 HT PERP WC | .364 | .352 | .411 | .432 | .389 | .336 | .407 | .344 | .340 | .416 |
| 42 DIGIT 5 HT PERP WC | .295 | .309 | .366 | .361 | .336 | .327 | .365 | .272 | .299 | .346 |
| 43 CROTCH 1 HEIGHT    | .164 | .149 | .280 | .253 | .161 | .114 | .163 | .215 | .161 | .228 |
| 44 CROTCH 2 HEIGHT    | .219 | .235 | .282 | .298 | .217 | .190 | .224 | .290 | .218 | .309 |
| 45 CROTCH 3 HEIGHT    | .222 | .258 | .259 | .293 | .228 | .217 | .247 | .292 | .238 | .319 |
| 46 CROTCH 4 HEIGHT    | .240 | .288 | .282 | .323 | .274 | .279 | .312 | .306 | .237 | .328 |
| 47 DIGIT 1 TIP-CROTCH | .254 | .241 | .338 | .333 | .255 | .260 | .272 | .229 | .283 | .305 |
| 48 DIGIT 2 TIP-CROTCH | .320 | .284 | .377 | .383 | .330 | .328 | .359 | .246 | .312 | .336 |
| 49 DIGIT 3 TIP-CROTCH | .366 | .332 | .385 | .404 | .356 | .312 | .374 | .271 | .311 | .357 |
| 50 DIGIT 4 TIP-CROTCH | .302 | .238 | .338 | .326 | .306 | .275 | .327 | .213 | .276 | .301 |
| 51 DIGIT 5 TIP-CROTCH | .209 | .195 | .320 | .290 | .278 | .283 | .306 | .159 | .225 | .241 |
| 52 DIGIT 1 TIP-WRIST  | .212 | .197 | .344 | .314 | .215 | .188 | .223 | .225 | .246 | .283 |
| 53 DIGIT 2 TIP-WRIST  | .329 | .322 | .401 | .415 | .346 | .303 | .359 | .328 | .325 | .397 |
| 54 DIGIT 3 TIP-WRIST  | .373 | .368 | .411 | .442 | .364 | .320 | .380 | .359 | .342 | .428 |
| 55 DIGIT 4 TIP-WRIST  | .358 | .337 | .404 | .422 | .378 | .341 | .403 | .349 | .326 | .412 |
| 56 DIG 4 PR JNT CIRC  | .308 | .308 | .388 | .395 | .343 | .348 | .380 | .300 | .296 | .362 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                        | 31   | 32   | 33   | 34   | 35   | 36   | 37   | 38   | 39   | 40   |
|------------------------|------|------|------|------|------|------|------|------|------|------|
| 1 HAND LENGTH          | .284 | .340 | .330 | .362 | .382 | .448 | .369 | .604 | .856 | .950 |
| 2 HAND BREADTH, META   | .478 | .489 | .540 | .512 | .390 | .538 | .582 | .278 | .529 | .564 |
| 3 HAND CIRC, METACARP  | .489 | .536 | .571 | .538 | .433 | .575 | .619 | .270 | .518 | .555 |
| 4 HAND CIRC, META, MIN | .321 | .356 | .378 | .420 | .366 | .461 | .447 | .242 | .413 | .408 |
| 5 HAND CIRC, TIPS EVN  | .408 | .439 | .470 | .460 | .411 | .512 | .523 | .309 | .554 | .574 |
| 6 FIST CIRCUMFERENCE   | .550 | .491 | .584 | .500 | .459 | .570 | .554 | .301 | .559 | .610 |
| 7 WRIST CIRCUMFERENCE  | .456 | .460 | .514 | .489 | .405 | .536 | .755 | .241 | .459 | .511 |
| 8 HAND THICK AT META   | .447 | .381 | .474 | .460 | .308 | .462 | .400 | .033 | .190 | .266 |
| 9 HND DPTH, THENR PAD  | .320 | .368 | .331 | .338 | .342 | .398 | .356 | .206 | .345 | .347 |
| 10 DIG 1 JOINT BRDTH   | .575 | .546 | .628 | .579 | .534 | .654 | .442 | .215 | .406 | .441 |
| 11 DIGIT 1 JOINT DPTH  | .480 | .557 | .580 | .446 | .550 | .587 | .502 | .221 | .362 | .406 |
| 12 DIGIT 1 JOINT CIRC  | .591 | .615 | .676 | .585 | .591 | .693 | .526 | .240 | .428 | .469 |
| 13 DIG 2 DST JNT BDTH  | .565 | .521 | .610 | .558 | .419 | .583 | .372 | .198 | .366 | .378 |
| 14 DIG 2 DST JNT DPTH  | .456 | .555 | .562 | .500 | .535 | .602 | .488 | .106 | .238 | .270 |
| 15 DIG 2 DST JNT CIRC  | .577 | .603 | .664 | .598 | .528 | .665 | .464 | .187 | .357 | .377 |
| 16 DIG 2 PR JNT BRDTH  | .522 | .538 | .594 | .637 | .529 | .691 | .491 | .254 | .449 | .458 |
| 17 DIG 2 PR JNT DPTH   | .460 | .465 | .525 | .441 | .516 | .559 | .492 | .262 | .371 | .374 |
| 18 DIG 2 PR JNT CIRC   | .549 | .562 | .624 | .594 | .588 | .696 | .555 | .295 | .462 | .462 |
| 19 DIG 3 DST JNT BDTH  | .637 | .598 | .699 | .588 | .493 | .641 | .448 | .162 | .315 | .346 |
| 20 DIG 3 DST JNT DPTH  | .433 | .659 | .596 | .510 | .511 | .601 | .510 | .097 | .229 | .306 |
| 21 DIG 3 DST JNT CIRC  | .612 | .693 | .728 | .619 | .552 | .694 | .523 | .150 | .307 | .368 |
| 22 DIG 3 PR JNT BRDTH  | .463 | .476 | .522 | .629 | .463 | .646 | .461 | .138 | .304 | .368 |
| 23 DIG 3 PR JNT DPTH   | .413 | .511 | .514 | .425 | .541 | .565 | .406 | .294 | .383 | .409 |
| 24 DIG 3 PR JNT CIRC   | .500 | .572 | .597 | .611 | .576 | .699 | .499 | .258 | .396 | .441 |
| 25 DIG 4 DST JNT BDTH  | .678 | .520 | .692 | .593 | .427 | .604 | .418 | .140 | .319 | .364 |
| 26 DIG 4 DST JNT DPTH  | .541 | .703 | .684 | .506 | .514 | .602 | .497 | .152 | .291 | .316 |
| 27 DIG 4 DST JNT CIRC  | .693 | .668 | .770 | .630 | .512 | .677 | .493 | .161 | .337 | .379 |
| 28 DIG 4 PR JNT BRDTH  | .449 | .481 | .524 | .709 | .411 | .673 | .418 | .219 | .325 | .357 |
| 29 DIG 4 PR JNT DPTH   | .306 | .436 | .405 | .381 | .557 | .541 | .384 | .207 | .312 | .339 |
| 30 DIG 4 PR JNT CIRC   | .449 | .536 | .548 | .650 | .589 | .730 | .480 | .256 | .386 | .425 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 31   | 32   | 33   | 34   | 35   | 36   | 37    | 38   | 39   | 40   |
|-----------------------|------|------|------|------|------|------|-------|------|------|------|
| 31 DIG 5 DST JNT BDTH |      | .529 | .909 | .508 | .390 | .530 | .409  | .101 | .257 | .299 |
| 32 DIG 5 DST JNT DPTH | .529 |      | .823 | .459 | .524 | .583 | .446  | .107 | .266 | .333 |
| 33 DIG 5 DST JNT CIRC | .909 | .823 |      | .554 | .510 | .630 | .479  | .104 | .281 | .338 |
| 34 DIG 5 PR JNT BRDTH | .508 | .459 | .554 |      | .425 | .852 | .416  | .183 | .341 | .370 |
| 35 DIG 5 PR JNT DPTH  | .390 | .524 | .510 | .425 |      | .825 | .382  | .215 | .324 | .391 |
| 36 DIG 5 PR JNT CIRC  | .530 | .583 | .630 | .852 | .825 |      | .473  | .241 | .399 | .460 |
| 37 WRIST BREADTH      | .409 | .446 | .479 | .416 | .382 | .473 |       | .004 | .221 | .297 |
| 38 DIGIT 1 HT PERP WC | .101 | .107 | .104 | .183 | .215 | .241 | .004  |      | .799 | .661 |
| 39 DIGIT 2 HT PERP WC | .257 | .266 | .281 | .341 | .324 | .399 | .221  | .799 |      | .922 |
| 40 DIGIT 3 HT PERP WC | .299 | .333 | .338 | .370 | .391 | .460 | .297  | .661 | .922 |      |
| 41 DIGIT 4 HT PERP WC | .315 | .346 | .355 | .379 | .395 | .471 | .316  | .549 | .839 | .954 |
| 42 DIGIT 5 HT PERP WC | .304 | .319 | .339 | .340 | .391 | .446 | .309  | .391 | .687 | .817 |
| 43 CROTCH 1 HEIGHT    | .159 | .126 | .148 | .237 | .225 | .292 | -.078 | .815 | .717 | .640 |
| 44 CROTCH 2 HEIGHT    | .196 | .224 | .216 | .292 | .294 | .359 | .096  | .679 | .828 | .817 |
| 45 CROTCH 3 HEIGHT    | .206 | .237 | .231 | .317 | .303 | .382 | .122  | .578 | .757 | .810 |
| 46 CROTCH 4 HEIGHT    | .238 | .285 | .275 | .331 | .325 | .405 | .175  | .466 | .693 | .788 |
| 47 DIGIT 1 TIP-CROTCH | .216 | .199 | .222 | .241 | .270 | .301 | .296  | .637 | .698 | .686 |
| 48 DIGIT 2 TIP-CROTCH | .231 | .250 | .265 | .256 | .259 | .307 | .311  | .522 | .728 | .691 |
| 49 DIGIT 3 TIP-CROTCH | .272 | .298 | .314 | .265 | .329 | .350 | .372  | .408 | .660 | .759 |
| 50 DIGIT 4 TIP-CROTCH | .223 | .229 | .246 | .217 | .251 | .278 | .274  | .426 | .667 | .734 |
| 51 DIGIT 5 TIP-CROTCH | .224 | .233 | .253 | .189 | .294 | .280 | .286  | .393 | .641 | .638 |
| 52 DIGIT 1 TIP-WRIST  | .139 | .142 | .141 | .220 | .280 | .311 | .073  | .880 | .753 | .716 |
| 53 DIGIT 2 TIP-WRIST  | .271 | .277 | .292 | .347 | .339 | .413 | .229  | .760 | .979 | .944 |
| 54 DIGIT 3 TIP-WRIST  | .307 | .338 | .346 | .371 | .390 | .460 | .299  | .655 | .918 | .998 |
| 55 DIGIT 4 TIP-WRIST  | .315 | .345 | .355 | .372 | .382 | .454 | .279  | .639 | .902 | .961 |
| 56 DIGIT 3 HT PERP WC | .320 | .340 | .361 | .328 | .396 | .431 | .277  | .584 | .836 | .861 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                        | 41   | 42   | 43    | 44   | 45   | 46   | 47   | 48   | 49   | 50   |
|------------------------|------|------|-------|------|------|------|------|------|------|------|
| 1 HAND LENGTH          | .897 | .782 | .569  | .754 | .748 | .734 | .687 | .672 | .749 | .699 |
| 2 HAND BREADTH, META   | .551 | .474 | .254  | .402 | .393 | .397 | .401 | .493 | .503 | .446 |
| 3 HAND CIRC, METACARP  | .543 | .498 | .227  | .398 | .401 | .419 | .384 | .475 | .483 | .414 |
| 4 HAND CIRC, META, MIN | .372 | .319 | .155  | .323 | .308 | .299 | .336 | .340 | .339 | .300 |
| 5 HAND CIRC, TIPS EVN  | .538 | .449 | .179  | .416 | .414 | .400 | .465 | .478 | .509 | .436 |
| 6 FIST CIRCUMFERENCE   | .608 | .569 | .275  | .420 | .449 | .457 | .466 | .530 | .547 | .480 |
| 7 WRIST CIRCUMF-ENCE   | .504 | .453 | .203  | .334 | .345 | .365 | .366 | .441 | .479 | .408 |
| 8 HAND THICK AT META   | .250 | .235 | -.030 | .072 | .096 | .169 | .230 | .277 | .356 | .218 |
| 9 HAND DPTH, THENR PAD | .342 | .290 | .153  | .229 | .238 | .252 | .350 | .341 | .339 | .268 |
| 10 DIG 1 JOINT BRDTH   | .469 | .429 | .275  | .331 | .351 | .400 | .287 | .339 | .359 | .316 |
| 11 DIGIT 1 JOINT DPTH  | .425 | .381 | .225  | .293 | .286 | .296 | .297 | .322 | .371 | .336 |
| 12 DIGIT 1 JOINT CIRC  | .498 | .453 | .278  | .348 | .353 | .391 | .327 | .371 | .401 | .362 |
| 13 DIG 2 DST JNT BDTH  | .369 | .334 | .261  | .257 | .247 | .300 | .213 | .355 | .337 | .263 |
| 14 DIG 2 DST JNT DPTH  | .279 | .252 | .079  | .141 | .151 | .180 | .208 | .281 | .286 | .254 |
| 15 DIG 2 DST JNT CIRC  | .373 | .332 | .210  | .236 | .230 | .276 | .244 | .368 | .359 | .296 |
| 16 DIG 2 PR JNT BRDTH  | .444 | .395 | .258  | .359 | .349 | .360 | .341 | .380 | .357 | .291 |
| 17 DIG 2 PR JNT DPTH   | .349 | .317 | .202  | .231 | .183 | .196 | .354 | .389 | .390 | .317 |
| 18 DIG 2 PR JNT CIRC   | .441 | .392 | .270  | .333 | .292 | .303 | .393 | .434 | .411 | .343 |
| 19 DIG 3 DST JNT BDTH  | .342 | .276 | .190  | .248 | .239 | .241 | .225 | .275 | .304 | .246 |
| 20 DIG 3 DST JNT DPTH  | .307 | .266 | .081  | .136 | .155 | .194 | .227 | .306 | .349 | .289 |
| 21 DIG 3 DST JNT CIRC  | .364 | .295 | .164  | .219 | .222 | .240 | .254 | .320 | .366 | .302 |
| 22 DIG 3 PR JNT BRDTH  | .352 | .309 | .149  | .235 | .258 | .288 | .241 | .284 | .332 | .238 |
| 23 DIG 3 PR JNT DPTH   | .411 | .366 | .280  | .282 | .259 | .282 | .338 | .377 | .385 | .338 |
| 24 DIG 3 PR JNT CIRC   | .432 | .381 | .253  | .298 | .293 | .323 | .333 | .383 | .404 | .328 |
| 25 DIG 4 DST JNT BDTH  | .389 | .336 | .161  | .217 | .228 | .274 | .255 | .330 | .356 | .306 |
| 26 DIG 4 DST JNT DPTH  | .336 | .327 | .114  | .190 | .217 | .279 | .260 | .328 | .312 | .275 |
| 27 DIG 4 DST JNT CIRC  | .407 | .365 | .163  | .224 | .247 | .312 | .272 | .359 | .374 | .327 |
| 28 DIG 4 PR JNT BRDTH  | .344 | .272 | .215  | .290 | .292 | .306 | .229 | .246 | .271 | .213 |
| 29 DIG 4 PR JNT DPTH   | .340 | .299 | .161  | .218 | .238 | .237 | .283 | .312 | .311 | .276 |
| 30 DIG 4 PR JNT CIRC   | .416 | .346 | .228  | .309 | .319 | .328 | .305 | .336 | .357 | .301 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 41   | 42   | 43    | 44   | 45   | 46   | 47   | 48   | 49   | 50   |
|-----------------------|------|------|-------|------|------|------|------|------|------|------|
| 31 DIG 5 DST JNT BDTH | .315 | .304 | .159  | .196 | .206 | .238 | .216 | .231 | .272 | .223 |
| 32 DIG 5 DST JNT DPTH | .346 | .319 | .126  | .224 | .237 | .285 | .199 | .250 | .298 | .229 |
| 33 DIG 5 DST JNT CIRC | .355 | .339 | .148  | .216 | .231 | .275 | .222 | .265 | .314 | .246 |
| 34 DIG 5 PR JNT BRDTH | .379 | .340 | .237  | .292 | .317 | .331 | .241 | .256 | .265 | .217 |
| 35 DIG 5 PR JNT DPTH  | .395 | .391 | .225  | .294 | .303 | .325 | .270 | .259 | .329 | .251 |
| 36 DIG 5 PR JNT CIRC  | .471 | .446 | .292  | .359 | .382 | .405 | .301 | .307 | .350 | .278 |
| 37 WRIST BREADTH      | .316 | .309 | -.078 | .096 | .122 | .175 | .296 | .311 | .372 | .274 |
| 38 DIGIT 1 HT PERP WC | .549 | .391 | .815  | .679 | .578 | .466 | .637 | .522 | .408 | .426 |
| 39 DIGIT 2 HT PERP WC | .839 | .687 | .717  | .828 | .757 | .693 | .698 | .728 | .660 | .667 |
| 40 DIGIT 3 HT PERP WC | .954 | .817 | .640  | .817 | .810 | .788 | .686 | .691 | .759 | .734 |
| 41 DIGIT 4 HT PERP WC |      | .904 | .596  | .777 | .816 | .834 | .633 | .651 | .705 | .744 |
| 42 DIGIT 5 HT PERP WC | .904 |      | .489  | .664 | .734 | .797 | .528 | .570 | .590 | .596 |
| 43 CROTCH 1 HEIGHT    | .596 | .489 |       | .765 | .691 | .602 | .379 | .335 | .253 | .305 |
| 44 CROTCH 2 HEIGHT    | .777 | .664 | .765  |      | .929 | .835 | .465 | .281 | .281 | .355 |
| 45 CROTCH 3 HEIGHT    | .816 | .734 | .691  | .929 |      | .886 | .420 | .269 | .266 | .326 |
| 46 CROTCH 4 HEIGHT    | .834 | .797 | .602  | .835 | .886 |      | .391 | .302 | .347 | .348 |
| 47 DIGIT 1 TIP-CROTCH | .633 | .528 | .379  | .465 | .420 | .591 |      | .727 | .674 | .657 |
| 48 DIGIT 2 TIP-CROTCH | .651 | .570 | .335  | .281 | .269 | .302 | .727 |      | .872 | .816 |
| 49 DIGIT 3 TIP-CROTCH | .705 | .590 | .253  | .281 | .266 | .347 | .674 | .872 |      | .878 |
| 50 DIGIT 4 TIP-CROTCH | .744 | .596 | .305  | .355 | .326 | .348 | .637 | .816 | .878 |      |
| 51 DIGIT 5 TIP-CROTCH | .640 | .650 | .272  | .343 | .311 | .286 | .507 | .729 | .730 | .786 |
| 52 DIGIT 1 TIP-WRIST  | .680 | .605 | .793  | .667 | .622 | .577 | .720 | .582 | .480 | .489 |
| 53 DIGIT 2 TIP-WRIST  | .892 | .763 | .709  | .822 | .770 | .730 | .737 | .755 | .692 | .701 |
| 54 DIGIT 3 TIP-WRIST  | .953 | .815 | .634  | .813 | .806 | .786 | .689 | .690 | .763 | .736 |
| 55 DIGIT 4 TIP-WRIST  | .964 | .813 | .638  | .817 | .820 | .811 | .624 | .651 | .695 | .738 |
| 56 DIGIT 4 TIP-CROTCH | .870 | .862 | .598  | .771 | .769 | .783 | .529 | .591 | .590 | .601 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 51   | 52   | 53   | 54   | 55   | 56   |
|-----------------------|------|------|------|------|------|------|
| 1 HAND LENGTH         | .613 | .681 | .889 | .951 | .896 | .800 |
| 2 HAND BREADTH, META  | .421 | .324 | .541 | .565 | .551 | .518 |
| 3 HAND CIRC,METACARP  | .438 | .310 | .525 | .555 | .541 | .540 |
| 4 HAND CIRC,META,MIN  | .312 | .237 | .408 | .408 | .392 | .393 |
| 5 HAND CIRC,TIPS EVN  | .441 | .306 | .550 | .580 | .565 | .528 |
| 6 FIST CIRCUMFERENCE  | .496 | .371 | .581 | .614 | .599 | .592 |
| 7 WRIST CIRCUMF-ENCE  | .389 | .291 | .462 | .509 | .490 | .472 |
| 8 HAND THICK AT META  | .205 | .031 | .213 | .271 | .229 | .223 |
| 9 HND DPTH,THENR PAD  | .280 | .263 | .353 | .350 | .344 | .330 |
| 10 DIG 1 JOINT BRDTH  | .283 | .255 | .410 | .436 | .465 | .446 |
| 11 DIGIT 1 JOINT DPTH | .324 | .264 | .370 | .408 | .410 | .391 |
| 12 DIGIT 1 JOINT CIRC | .335 | .289 | .435 | .466 | .486 | .464 |
| 13 DIG 2 DST JNT BDTH | .245 | .249 | .384 | .377 | .368 | .355 |
| 14 DIG 2 DST JNT DPTH | .230 | .131 | .250 | .271 | .279 | .268 |
| 15 DIG 2 DST JNT CIRC | .265 | .230 | .373 | .377 | .373 | .356 |
| 16 DIG 2 PR JNT BRDTH | .282 | .298 | .460 | .458 | .453 | .429 |
| 17 DIG 2 PR JNT DPTH  | .338 | .289 | .376 | .376 | .366 | .354 |
| 18 DIG 2 PR JNT CIRC  | .349 | .333 | .471 | .462 | .455 | .431 |
| 19 DIG 3 DST JNT BDTH | .172 | .206 | .322 | .347 | .346 | .310 |
| 20 DIG 3 DST JNT DPTH | .229 | .161 | .262 | .313 | .297 | .261 |
| 21 DIG 3 DST JNT CIRC | .209 | .212 | .329 | .373 | .358 | .308 |
| 22 DIG 3 PR JNT BRDTH | .195 | .197 | .322 | .368 | .337 | .308 |
| 23 DIG 3 PR JNT DPTH  | .320 | .344 | .401 | .411 | .404 | .388 |
| 24 DIG 3 PR JNT CIRC  | .290 | .314 | .415 | .442 | .422 | .395 |
| 25 DIG 4 DST JNT BDTH | .275 | .215 | .346 | .364 | .378 | .343 |
| 26 DIG 4 DST JNT DPTH | .283 | .188 | .303 | .320 | .341 | .348 |
| 27 DIG 4 DST JNT CIRC | .306 | .223 | .359 | .380 | .403 | .380 |
| 28 DIG 4 PR JNT BRDTH | .159 | .225 | .328 | .359 | .349 | .300 |
| 29 DIG 4 PR JNT DPTH  | .225 | .246 | .325 | .342 | .326 | .276 |
| 30 DIG 4 PR JNT CIRC  | .241 | .283 | .397 | .428 | .412 | .362 |

# CORRELATION MATRIX FOR FEMALE HANDS

|                       | 51   | 52   | 53   | 54   | 55   | 56   |
|-----------------------|------|------|------|------|------|------|
| 31 DIG 5 DST JNT BDTH | .224 | .139 | .271 | .307 | .315 | .320 |
| 32 DIG 5 DST JNT DPTH | .233 | .142 | .277 | .338 | .345 | .340 |
| 33 DIG 5 DST JNT CIRC | .253 | .141 | .292 | .346 | .355 | .361 |
| 34 DIG 5 PR JNT BRDTH | .189 | .220 | .347 | .371 | .372 | .328 |
| 35 DIG 5 PR JNT DPTH  | .294 | .280 | .339 | .390 | .382 | .396 |
| 36 DIG 5 PR JNT CIRC  | .280 | .311 | .413 | .460 | .454 | .431 |
| 37 WRIST BREADTH      | .286 | .073 | .229 | .299 | .279 | .277 |
| 38 DIGIT 1 HT PERP WC | .393 | .880 | .760 | .655 | .639 | .584 |
| 39 DIGIT 2 HT PERP WC | .621 | .753 | .979 | .918 | .902 | .836 |
| 40 DIGIT 3 HT PERP WC | .638 | .716 | .944 | .998 | .961 | .861 |
| 41 DIGIT 4 HT PERP WC | .640 | .680 | .892 | .953 | .964 | .870 |
| 42 DIGIT 5 HT PERP WC | .650 | .605 | .763 | .815 | .813 | .862 |
| 43 CROTCH 1 HEIGHT    | .272 | .793 | .709 | .634 | .638 | .598 |
| 44 CROTCH 2 HEIGHT    | .343 | .667 | .822 | .813 | .817 | .771 |
| 45 CROTCH 3 HEIGHT    | .311 | .622 | .770 | .806 | .820 | .769 |
| 46 CROTCH 4 HEIGHT    | .286 | .577 | .730 | .786 | .811 | .783 |
| 47 DIGIT 1 TIP-CROTCH | .507 | .720 | .737 | .689 | .624 | .529 |
| 48 DIGIT 2 TIP-CROTCH | .729 | .582 | .755 | .690 | .651 | .591 |
| 49 DIGIT 3 TIP-CROTCH | .730 | .480 | .692 | .763 | .695 | .590 |
| 50 DIGIT 4 TIP-CROTCH | .786 | .489 | .701 | .736 | .738 | .601 |
| 51 DIGIT 5 TIP-CROTCH |      | .413 | .637 | .636 | .641 | .686 |
| 52 DIGIT 1 TIP-WRIST  | .413 |      | .792 | .712 | .671 | .616 |
| 53 DIGIT 2 TIP-WRIST  | .637 | .792 |      | .942 | .920 | .850 |
| 54 DIGIT 3 TIP-WRIST  | .636 | .712 | .942 |      | .961 | .858 |
| 55 DIGIT 4 TIP-WRIST  | .641 | .671 | .920 | .961 |      | .901 |
| 56 DIGIT 5 TIP-WRIST  | .686 | .616 | .850 | .858 | .901 |      |

## SECTION VII

### BIVARIATE FREQUENCY TABLES

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# H A N D L E N G T H

## STATURE

|      | 59.0 | 59.5 | 60.0 | 60.5 | 61.0 | 61.5 | 62.0 | 62.5 | 63.0 | 63.5 | 64.0 | 64.5 | 65.0 | 65.5 | 66.0 | 66.5 | 67.0 | 67.5 | 68.0 | 68.5 | 69.0 | 69.5 | 70.0 | 70.5 | Total |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 7.99 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.4  |      |      |      | 0.4   |
| 7.89 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.1  |      |      |      | 0.1   |
| 7.79 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.5  |      |      |      | 0.5   |
| 7.69 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.0  |      |      |      | 0.0   |
| 7.59 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 3.5  |      |      |      | 3.5   |
| 7.49 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 3.3  |      |      |      | 3.3   |
| 7.39 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 4.8  |      |      |      | 4.8   |
| 7.29 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.3  |      |      |      | 5.3   |
| 7.19 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 10.9 |      |      |      | 10.9  |
| 7.09 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 11.0 |      |      |      | 11.0  |
| 6.99 | 0.1  | 0.4  | 0.5  | 0.5  | 1.0  | 1.6  | 0.9  | 0.4  | 0.5  | 0.9  | 1.0  | 0.8  | 0.6  | 1.0  | 1.0  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 1.0  | 0.5  | 0.5  | 10.8  |
| 6.89 | 0.4  | 0.5  | 0.5  | 0.5  | 1.0  | 1.2  | 0.9  | 0.7  | 0.5  | 0.9  | 1.0  | 0.8  | 0.6  | 1.0  | 1.0  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 1.0  | 0.5  | 0.5  | 9.9   |
| 6.79 | 0.5  | 0.5  | 0.5  | 0.5  | 1.0  | 1.0  | 0.7  | 1.0  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 0.5  | 1.0  | 0.5  | 0.5  | 9.0   |
| 6.69 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 7.5  |      |      |      | 7.5   |
| 6.59 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 8.7  |      |      |      | 8.7   |
| 6.49 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 5.4  |      |      |      | 5.4   |
| 6.39 | 0.5  | 0.5  | 0.5  | 0.5  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 1.0  | 0.2  | 0.2  | 4.2   |
| 6.29 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 2.3  |      |      |      | 2.3   |
| 6.19 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1.0  |      |      |      | 1.0   |
| 6.09 | 0.2  | 0.2  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.5  |      |      |      | 0.5   |
|      | 1.2  | 3.7  | 2.3  | 4.9  | 4.3  | 5.8  | 5.9  | 7.9  | 5.5  | 4.9  | 6.2  | 9.4  | 4.8  | 6.1  | 6.4  | 4.8  | 3.0  | 6.1  | 2.3  | 1.5  | 1.0  | 1.0  | 0.5  | 0.5  | 100.0 |

Bivariate Frequency Table for Hand Length and Stature

r=.700 (for grouped data)

(All frequency values are expressed as percentages. Dimensions are in inches)

H A N D   L E N G T H

H A N D   B R E A D T H ;   M E T A .

|      | 2.74 | 2.84 | 2.94 | 3.04 | 3.14 | 3.24 | 3.34 | 3.44 | Total |
|------|------|------|------|------|------|------|------|------|-------|
| 7.99 |      |      |      |      |      |      |      |      | 0.4   |
| 7.89 |      |      |      |      |      | 0.4  |      |      | 0.1   |
| 7.79 |      |      |      |      |      | 0.1  |      |      | 0.5   |
| 7.69 |      |      |      |      |      |      |      | 0.5  | 0.0   |
| 7.59 |      |      | 0.2  | 0.3  | 0.9  | 1.0  | 0.9  |      | 3.3   |
| 7.49 |      |      | 0.7  | 0.5  | 1.0  | 0.7  | 0.5  | 0.5  | 3.9   |
| 7.39 |      | 0.5  | 0.0  | 0.3  | 1.7  | 1.5  | 0.7  | 0.2  | 4.9   |
| 7.29 |      |      | 0.4  | 1.2  | 2.2  | 1.0  | 0.7  |      | 5.5   |
| 7.19 |      | 0.1  | 3.0  | 2.2  | 3.4  | 2.1  | 0.2  |      | 11.1  |
| 7.09 |      | 0.9  | 3.5  | 3.2  | 3.8  | 0.2  |      |      | 11.6  |
| 6.99 | 0.2  | 1.0  | 2.0  | 2.2  | 4.9  | 0.9  |      |      | 11.1  |
| 6.89 | 0.9  | 0.4  | 3.0  | 2.2  | 2.6  | 0.7  |      |      | 9.3   |
| 6.79 | 1.3  | 0.8  | 3.2  | 2.1  | 1.4  | 0.2  |      |      | 9.1   |
| 6.69 | 0.5  | 1.5  | 2.3  | 1.6  | 1.2  | 0.5  |      |      | 7.6   |
| 6.59 | 1.4  | 1.1  | 3.9  | 1.0  | 0.9  |      |      |      | 8.4   |
| 6.49 |      | 0.7  | 1.9  | 1.5  | 0.8  | 0.2  |      |      | 5.2   |
| 6.39 | 1.1  | 1.2  | 0.5  | 1.2  |      |      |      |      | 4.1   |
| 6.29 | 0.5  | 0.0  | 0.7  | 0.9  |      |      |      |      | 2.2   |
| 6.19 | 0.2  | 0.3  | 0.5  |      |      |      |      |      | 0.9   |
| 6.09 |      | 0.5  |      |      |      |      |      |      | 0.5   |
|      | 6.0  | 9.0  | 25.9 | 20.4 | 24.9 | 9.6  | 3.0  | 1.1  | 100.0 |

Bivariate Frequency Table for Hand Length and Hand Breadth; Meta.

r = .561 (for grouped data)

(All frequency values are expressed as percentages. Dimensions are in inches)

# HAND LENGTH

## HAND CIRC; META.

|      | 6.60 | 6.70 | 6.80 | 6.90 | 7.00 | 7.10 | 7.20 | 7.30 | 7.40 | 7.50 | 7.60 | 7.70 | 7.80 | 7.90 | 8.00 | 8.10 | 8.20 | 8.30 | Total |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 7.99 |      |      |      |      |      |      |      |      |      |      |      |      | 0.4  |      |      |      |      |      | 0.4   |
| 7.89 |      |      |      |      |      |      |      |      |      |      |      |      | 0.1  |      |      |      |      |      | 0.1   |
| 7.79 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.4  |      | 0.4   |
| 7.69 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.0   |
| 7.59 |      |      |      |      |      |      |      |      | 0.5  | 0.9  | 0.1  | 0.4  | 0.5  | 0.5  | 0.5  |      | 0.5  |      | 3.3   |
| 7.49 |      |      |      |      | 0.5  | 0.1  | 0.4  | 0.3  | 1.0  | 0.9  | 0.5  | 0.5  | 0.5  | 0.1  | 0.7  |      | 0.5  |      | 3.9   |
| 7.39 |      |      | 0.5  |      |      |      |      | 0.2  | 1.0  | 0.1  |      |      |      | 0.6  | 1.5  |      |      |      | 4.9   |
| 7.29 |      |      |      |      |      |      |      | 1.3  | 0.8  | 0.4  | 0.3  | 1.4  | 0.6  | 0.6  | 0.2  |      |      |      | 5.5   |
| 7.19 |      |      |      |      | 0.1  | 0.6  | 1.2  | 1.6  | 1.3  | 1.3  | 1.8  | 0.8  | 1.1  | 0.8  | 0.4  |      |      |      | 11.1  |
| 7.09 |      |      |      |      | 1.6  | 0.5  | 1.8  | 1.7  | 2.0  | 2.2  | 0.8  | 0.5  |      | 0.2  | 0.3  |      |      |      | 11.6  |
| 6.99 |      |      | 0.1  | 1.0  | 0.8  | 0.2  | 1.8  | 1.9  | 2.1  | 1.1  | 0.6  | 0.5  |      | 0.5  | 0.5  |      |      |      | 11.1  |
| 6.89 | 0.5  | 0.6  | 0.6  | 0.6  | 0.6  | 0.9  | 0.9  | 0.4  | 1.0  | 1.4  | 1.3  | 1.5  |      |      |      |      |      |      | 9.8   |
| 6.79 |      | 1.0  | 1.2  | 1.1  | 1.1  | 0.5  | 0.1  | 1.7  | 1.8  | 1.2  |      | 0.5  |      |      |      |      |      |      | 9.1   |
| 6.69 |      | 0.3  | 0.9  | 0.8  | 1.0  | 1.0  | 1.4  | 1.6  | 0.4  | 0.4  | 0.4  | 0.2  | 0.3  |      |      |      |      |      | 7.6   |
| 6.59 | 0.5  | 0.5  | 1.0  | 1.5  | 1.7  | 1.4  | 1.4  | 0.5  | 0.5  | 0.7  | 0.1  |      |      |      |      |      |      |      | 8.4   |
| 6.49 |      |      |      |      | 0.9  | 1.4  | 1.0  | 1.0  | 0.6  | 0.4  | 0.8  | 0.2  |      |      |      |      |      |      | 5.2   |
| 6.39 | 0.2  | 0.3  |      | 0.5  | 0.4  | 0.1  | 0.8  | 1.0  | 0.7  |      |      |      |      |      |      |      |      |      | 4.1   |
| 6.29 |      |      |      | 0.5  | 0.0  | 0.1  | 0.8  | 0.1  | 0.7  |      |      |      |      |      |      |      |      |      | 2.2   |
| 6.19 |      |      |      | 0.5  | 0.5  |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.9   |
| 6.09 |      |      |      | 0.5  |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.5   |
|      | 1.2  | 0.3  | 2.4  | 7.1  | 7.8  | 6.7  | 12.1 | 13.0 | 13.7 | 9.3  | 8.0  | 6.2  | 3.8  | 3.4  | 3.9  | 0.0  | 0.5  | 0.9  | 100.0 |

Bivariate Frequency Table for Hand Length and Hand Circumference; Metacarpale

r = .558 (for grouped data)

(All frequency values are expressed as percentages. Dimensions are in inches)

# CROTCH 3 HEIGHT

|      | 3.29 | 3.39 | 3.49 | 3.59 | 3.69 | 3.79 | 3.89 | 3.99 | 4.09 | 4.19 | 4.29 | 4.39 | 4.49 | 4.59 | 4.69 | 4.79 | Total |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 7.99 |      |      |      |      |      |      |      |      |      |      |      | 0.4  |      |      |      |      | 0.4   |
| 7.89 |      |      |      |      |      |      |      |      |      |      |      | 0.1  |      |      |      |      | 0.1   |
| 7.79 |      |      |      |      |      |      |      |      | 0.5  |      |      |      |      |      |      |      | 0.5   |
| 7.69 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.0   |
| 7.59 |      |      |      |      |      |      | 0.3  | 0.2  | 0.9  | 0.1  | 1.4  | 0.4  |      |      |      |      | 3.3   |
| 7.49 |      |      |      |      |      |      | 0.2  | 0.5  | 1.2  | 0.4  | 0.4  | 1.1  |      |      |      |      | 3.9   |
| 7.39 |      |      |      |      |      |      | 0.5  | 0.4  | 2.3  | 1.2  |      |      |      |      | 0.4  |      | 4.9   |
| 7.29 |      |      |      |      |      |      | 1.1  | 2.8  | 1.0  | 0.7  |      |      |      |      |      |      | 5.5   |
| 7.19 |      |      |      |      |      |      | 0.7  | 3.6  | 4.1  | 1.9  | 0.7  | 0.1  |      |      |      |      | 11.1  |
| 7.09 |      |      |      |      | 0.2  | 1.8  | 5.6  | 1.3  | 1.4  | 0.5  | 0.4  |      |      | 0.2  | 0.3  |      | 11.6  |
| 6.99 |      |      |      |      | 0.7  | 4.0  | 3.1  | 2.2  | 1.0  | 0.2  |      |      |      |      |      |      | 11.1  |
| 6.89 |      |      |      |      | 1.2  | 5.2  | 1.8  | 1.2  | 0.2  | 0.1  |      |      |      |      |      |      | 9.8   |
| 6.79 |      |      |      | 0.2  | 0.5  | 3.2  | 2.5  | 1.6  | 0.5  | 0.8  |      |      |      |      |      |      | 9.1   |
| 6.69 |      |      |      | 0.7  | 0.9  | 0.9  | 2.7  | 1.8  | 0.6  |      |      |      |      |      |      |      | 7.6   |
| 6.59 |      |      |      | 1.2  | 3.0  | 2.9  | 1.0  | 0.1  | 0.1  | 0.1  |      |      |      |      |      |      | 8.4   |
| 6.49 | 0.5  |      |      | 1.2  | 1.8  | 0.9  | 0.4  |      | 0.2  | 0.1  |      |      |      |      |      |      | 5.2   |
| 6.39 |      |      |      | 0.6  | 1.7  | 1.2  | 0.5  |      |      |      |      |      |      |      |      |      | 4.1   |
| 6.29 |      |      |      | 1.1  | 1.0  |      |      |      |      |      |      |      |      |      |      |      | 2.2   |
| 6.19 |      |      |      | 0.4  | 0.5  |      |      |      |      |      |      |      |      |      |      |      | 0.9   |
| 6.09 |      |      |      |      |      |      |      | 0.5  |      |      |      |      |      |      |      |      | 0.5   |
|      | 0.5  | 2.2  | 6.4  | 7.9  | 10.5 | 13.4 | 19.6 | 13.8 | 11.1 | 4.5  | 2.3  | 1.9  | 0.0  | 0.2  | 0.7  | 0.0  | 100.0 |

Bivariate Frequency Table for Hand Length and Crotch 3 Height

r = .752 (for grouped data)

(All frequency values are expressed as percentages. Dimensions are in inches)

# **HAND CIRCUMFERENCE** **FINGERTIPS EVEN**

## **HAND CIRC; META.**

|       | 6.60 | 6.70 | 6.80 | 6.90 | 7.00 | 7.10 | 7.20 | 7.30 | 7.40 | 7.50 | 7.60 | 7.70 | 7.80 | 7.90 | 8.00 | 8.10 | 8.20 | 8.30 | Total |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 10.06 |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.6  |      |      |      | 0.6   |
| 9.96  |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.7  |      |      |      | 0.7   |
| 9.86  |      |      |      |      |      |      | 0.2  |      |      |      | 0.5  |      |      | 0.2  | 0.4  |      | 0.5  | 0.5  | 2.2   |
| 9.76  |      |      |      |      |      |      | 0.3  |      |      | 0.5  |      |      | 0.8  | 1.0  |      |      |      |      | 1.6   |
| 9.66  |      |      |      |      |      |      |      |      | 0.4  | 0.1  | 0.4  | 0.1  | 1.2  | 0.3  | 0.7  |      | 0.4  |      | 3.2   |
| 9.56  |      |      |      |      |      |      |      |      |      | 0.5  | 0.0  | 1.2  | 0.8  |      | 1.0  |      |      |      | 2.5   |
| 9.46  |      |      |      |      |      |      | 0.2  |      |      | 0.5  | 0.0  | 0.5  | 0.5  |      |      |      |      |      | 3.6   |
| 9.36  |      |      | 0.2  | 0.2  |      |      | 0.3  | 0.5  |      |      |      |      |      |      |      |      |      |      | 2.7   |
| 9.26  |      |      |      |      |      | 0.7  | 1.2  | 1.3  | 1.3  | 0.2  | 0.7  | 0.8  |      |      |      |      |      |      | 6.2   |
| 9.16  |      |      |      |      | 0.9  |      | 0.5  | 0.4  | 1.6  | 0.5  | 1.8  | 1.2  |      | 0.2  | 0.3  |      |      |      | 7.4   |
| 9.06  |      |      |      |      |      | 0.3  | 0.0  | 1.3  | 2.0  | 1.4  | 1.5  | 0.9  |      | 0.5  | 0.3  |      |      |      | 8.2   |
| 8.96  |      |      |      |      | 0.1  | 0.2  | 0.4  | 1.2  | 0.9  | 3.2  | 0.6  | 0.3  |      | 0.6  |      |      |      |      | 7.6   |
| 8.86  |      |      |      |      | 1.0  | 0.2  | 1.3  | 2.8  | 2.0  | 1.0  | 0.9  |      | 0.3  |      |      |      |      |      | 9.3   |
| 8.76  |      |      |      |      | 0.2  | 1.3  | 1.9  | 1.5  | 1.7  | 0.8  | 0.4  | 0.8  |      |      |      |      |      |      | 9.5   |
| 8.66  |      |      |      |      | 1.2  | 1.2  | 0.6  | 1.5  | 1.2  | 0.1  | 0.7  | 0.5  |      |      |      |      |      |      | 7.3   |
| 8.56  |      |      |      |      | 1.3  | 1.7  | 1.8  | 1.4  | 0.9  |      |      |      |      |      |      |      |      |      | 8.0   |
| 8.46  |      |      |      |      | 0.3  | 0.5  | 1.7  | 0.4  | 1.0  | 0.1  |      |      |      |      |      |      |      |      | 5.9   |
| 8.36  |      |      | 0.5  |      | 0.9  | 0.6  | 0.9  | 0.0  | 0.1  | 0.5  |      |      |      |      |      |      |      |      | 3.9   |
| 8.26  | 0.5  |      | 0.5  | 0.5  | 0.9  |      | 0.8  | 0.2  |      |      |      |      |      |      |      |      |      |      | 3.3   |
| 8.16  |      |      |      | 0.5  | 1.0  |      |      |      |      | 0.5  |      |      |      |      |      |      |      |      | 2.0   |
| 8.06  |      |      |      | 1.0  |      |      | 0.5  |      |      |      |      |      |      |      |      |      |      |      | 1.5   |
| 7.96  |      |      | 1.1  | 0.7  |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 1.8   |
| 7.86  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 9.0   |
| 7.76  | 0.1  | 0.2  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.3   |
| 7.66  | 0.5  | 0.1  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      | 0.6   |
|       | 1.2  | 0.3  | 2.4  | 7.1  | 7.8  | 6.7  | 12.1 | 13.0 | 13.7 | 9.3  | 8.0  | 6.2  | 3.8  | 3.4  | 3.9  | 0.0  | 0.5  | 0.9  | 100.0 |

Bivariate Frequency Table for Hand Circumference; Fingertips Even and Hand Circumference; Metacarpale

r= .734 (for grouped data)

(All frequency values are expressed as percentages. Dimensions are in inches)

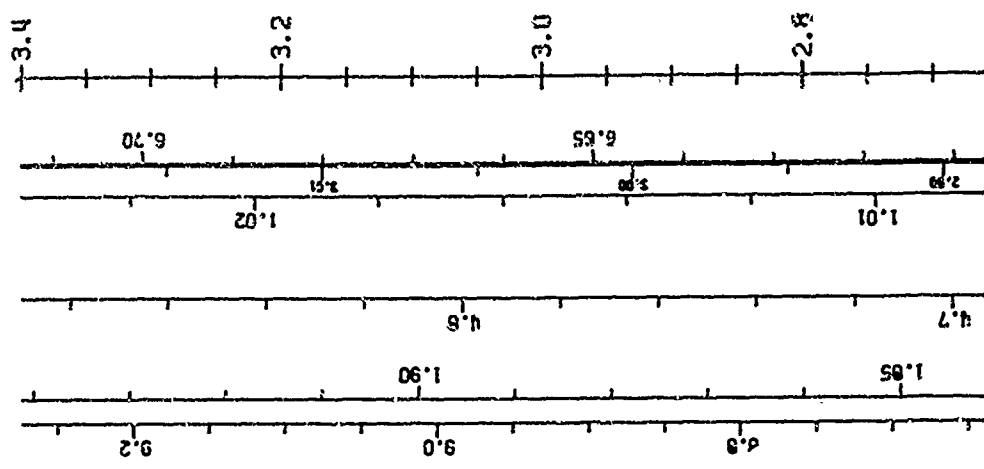
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## **SECTION VIII**

### **SELECTED NOMOGRAPHS**

1. English Units of Measurement
2. Metric Units of Measurement

Hand Breadth: MPTA  
 Hand Breadth: Keta III  
 Hand Circumference  
 Hand Depth: Tamar Pad  
 Fit Circumference

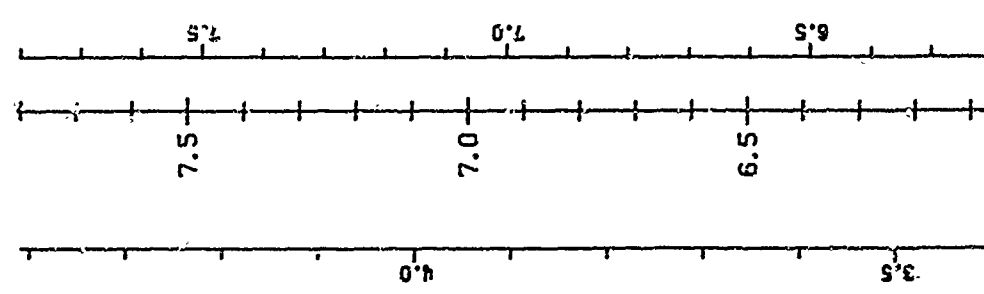


### USAF FEMALE PERSONNEL

A straight line passing through known values of HAND LENGTH and HAND BREADTH. METACARPALE will also pass through average values of the other dimensions for USAF female personnel having this Hand Length and this Hand Breadth, Metacarpale. Each average value thus found is the midpoint of a range, found by adding and subtracting the number shown below the line to this midpoint, which will include the dimensions of about two-thirds of the women with the original values of Hand Length and Hand Breadth, Metacarpale.

All dimensions are in inches.

Hand Length  
 Dist. 3 Length: Total  
 Tip To Wrist Crease  
 Grade 3 HL







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| 13. ABSTRACT   |                        |   |
| <p>This report describes 56 anthropometric dimensions measured on the hands of 211 Air Force female personnel (Women in the Air Force, Nurse Corps, and Biomedical Science Corps), aged 18-56. Summary statistics including the means, standard deviations, ranges, selected percentiles, measures of distribution, and coefficients of variation are presented for the 56 dimensions. Also included are statistical variations by age, rank and Corps within the sample, a complete correlation matrix, bivariate tables, and nomographs for various selected combinations of dimensions.</p> |                        |   |

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|--|--------|----|--------|----|--------|----|
|  | ROLE   | WT | ROLE   | WT | ROLE   | WT |
| Anthropology<br>Anthropometry<br>Hands<br>Hand Measurements<br>Body Size |        |    |        |    |        |    |

**SUPPLEMENTARY**

**INFORMATION**

Multiple Regression Equations in Terms of Hand Length & Hand Breadth

|    |                    |   |             |   |             |   |          |           |          |
|----|--------------------|---|-------------|---|-------------|---|----------|-----------|----------|
| 1  | HAND LENGTH        | = | (1.000)H.L. | + | (0.000)H.B. | + | (0.000)  | R = 1.000 | SE = .00 |
| 2  | HAND BREADTH META  | = | (0.000)H.L. | + | (1.000)H.B. | + | (0.000)  | R = 1.000 | SE = .00 |
| 3  | HAND CIRC METACARP | = | (.079)H.L.  | + | (1.851)H.B. | + | (3.022)  | R = .897  | SE = .37 |
| 4  | HAND CIRC META MIN | = | (-.006)H.L. | + | (2.306)H.B. | + | (3.788)  | R = .710  | SE = .87 |
| 5  | HAND CIRC TIPS EVN | = | (.286)H.L.  | + | (1.969)H.B. | + | (2.291)  | R = .773  | SE = .73 |
| 6  | FIST CIRC          | = | (.386)H.L.  | + | (2.161)H.B. | + | (1.248)  | R = .799  | SE = .79 |
| 7  | WRIST CIRC         | = | (.157)H.L.  | + | (1.158)H.B. | + | (3.237)  | R = .745  | SE = .47 |
| 8  | HAND THICK AT META | = | (.008)H.L.  | + | (.192)H.B.  | + | (1.136)  | R = .428  | SE = .16 |
| 9  | HND DPTH THENR PAD | = | (.062)H.L.  | + | (.386)H.B.  | + | (1.082)  | R = .468  | SE = .34 |
| 10 | DIG 1 JOINT BROTH  | = | (.021)H.L.  | + | (.141)H.B.  | + | (.436)   | R = .550  | SE = .10 |
| 11 | DIGIT 1 JOINT DPTH | = | (.013)H.L.  | + | (.157)H.B.  | + | (.216)   | R = .554  | SE = .12 |
| 12 | DIGIT 1 JOINT CIRC | = | (.043)H.L.  | + | (.467)H.B.  | + | (1.149)  | R = .617  | SE = .26 |
| 13 | DIG 2 DST JNT BOTH | = | (.003)H.L.  | + | (.152)H.B.  | + | (.314)   | R = .591  | SE = .03 |
| 14 | DIG 2 DST JNT DPTH | = | (-.003)H.L. | + | (.117)H.B.  | + | (.432)   | R = .479  | SE = .02 |
| 15 | DIG 2 DST JNT CIRC | = | (0.000)H.L. | + | (.419)H.B.  | + | (1.230)  | R = .613  | SE = .21 |
| 16 | DIG 2 PR JNT BROTH | = | (.013)H.L.  | + | (.145)H.B.  | + | (.469)   | R = .623  | SE = .08 |
| 17 | DIG 2 PR JNT DPTH  | = | (.016)H.L.  | + | (.110)H.B.  | + | (.485)   | R = .508  | SE = .09 |
| 18 | DIG 2 PR JNT CIRC  | = | (.048)H.L.  | + | (.407)H.B.  | + | (1.401)  | R = .625  | SE = .23 |
| 19 | DIG 3 DST JNT BOTH | = | (-.001)H.L. | + | (.133)H.B.  | + | (.523)   | R = .558  | SE = .07 |
| 20 | DIG 3 DST JNT DPTH | = | (0.000)H.L. | + | (.131)H.B.  | + | (.300)   | R = .553  | SE = .07 |
| 21 | DIG 3 DST JNT CIRC | = | (0.000)H.L. | + | (.422)H.B.  | + | (1.226)  | R = .617  | SE = .20 |
| 22 | DIG 3 PR JNT BROTH | = | (.007)H.L.  | + | (.144)H.B.  | + | (.594)   | R = .580  | SE = .08 |
| 23 | DIG 3 PR JNT DPTH  | = | (.018)H.L.  | + | (.129)H.B.  | + | (.353)   | R = .539  | SE = .09 |
| 24 | DIG 3 PR JNT CIRC  | = | (.034)H.L.  | + | (.423)H.B.  | + | (1.629)  | R = .639  | SE = .22 |
| 25 | DIG 4 DST JNT BOTH | = | (.002)H.L.  | + | (.132)H.B.  | + | (.376)   | R = .567  | SE = .07 |
| 26 | DIG 4 DST JNT DPTH | = | (.002)H.L.  | + | (.124)H.B.  | + | (.258)   | R = .534  | SE = .08 |
| 27 | DIG 4 DST JNT CIRC | = | (.006)H.L.  | + | (.375)H.B.  | + | (1.221)  | R = .605  | SE = .19 |
| 28 | DIG 4 PR JNT BROTH | = | (.006)H.L.  | + | (.130)H.B.  | + | (.580)   | R = .521  | SE = .09 |
| 29 | DIG 4 PR JNT DPTH  | = | (.017)H.L.  | + | (.092)H.B.  | + | (.556)   | R = .412  | SE = .10 |
| 30 | DIG 4 PR JNT CIRC  | = | (.035)H.L.  | + | (.352)H.B.  | + | (1.779)  | R = .567  | SE = .22 |
| 31 | DIG 5 DST JNT BOTH | = | (.002)H.L.  | + | (.111)H.B.  | + | (.418)   | R = .478  | SE = .08 |
| 32 | DIG 5 DST JNT DPTH | = | (.010)H.L.  | + | (.104)H.B.  | + | (.149)   | R = .495  | SE = .08 |
| 33 | DIG 5 DST JNT CIRC | = | (.009)H.L.  | + | (.329)H.B.  | + | (1.162)  | R = .541  | SE = .20 |
| 34 | DIG 5 PR JNT BROTH | = | (.011)H.L.  | + | (.107)H.B.  | + | (.438)   | R = .519  | SE = .08 |
| 35 | DIG 5 PR JNT DPTH  | = | (.025)H.L.  | + | (.060)H.B.  | + | (.479)   | R = .436  | SE = .08 |
| 36 | DIG 5 PR JNT CIRC  | = | (.061)H.L.  | + | (.275)H.B.  | + | (1.266)  | R = .565  | SE = .21 |
| 37 | WRIST BREADTH      | = | (.021)H.L.  | + | (.478)H.B.  | + | (1.768)  | R = .584  | SE = .27 |
| 38 | DIGIT 1 HT PERP WC | = | (.044)H.L.  | + | (-.215)H.B. | + | (-1.249) | R = .609  | SE = .67 |
| 39 | DIGIT 2 HT PERP WC | = | (.078)H.L.  | + | (.150)H.B.  | + | (-.469)  | R = .858  | SE = .47 |
| 40 | DIGIT 3 HT PERP WC | = | (.052)H.L.  | + | (.080)H.B.  | + | (-.056)  | R = .950  | SE = .27 |
| 41 | DIGIT 4 HT PERP WC | = | (.093)H.L.  | + | (.141)H.B.  | + | (-.739)  | R = .898  | SE = .39 |
| 42 | DIGIT 5 HT PERP WC | = | (.078)H.L.  | + | (.101)H.B.  | + | (-1.936) | R = .783  | SE = .55 |
| 43 | CROTCH 1 HEIGHT    | = | (.409)H.L.  | + | (-.152)H.B. | + | (-.441)  | R = .575  | SE = .46 |
| 44 | CROTCH 2 HEIGHT    | = | (.542)H.L.  | + | (-.063)H.B. | + | (.628)   | R = .755  | SE = .39 |
| 45 | CROTCH 3 HEIGHT    | = | (.532)H.L.  | + | (-.075)H.B. | + | (.849)   | R = .749  | SE = .39 |
| 46 | CROTCH 4 HEIGHT    | = | (.524)H.L.  | + | (-.048)H.B. | + | (-.305)  | R = .734  | SE = .41 |
| 47 | DIGIT 1 TIP-CROTCH | = | (.347)H.L.  | + | (.017)H.B.  | + | (-.383)  | R = .687  | SE = .32 |
| 48 | DIGIT 2 TIP-CROTCH | = | (.350)H.L.  | + | (.224)H.B.  | + | (-1.103) | R = .685  | SE = .38 |
| 49 | DIGIT 3 TIP-CROTCH | = | (.406)H.L.  | + | (.152)H.B.  | + | (-.631)  | R = .755  | SE = .33 |
| 50 | DIGIT 4 TIP-CROTCH | = | (.398)H.L.  | + | (.098)H.B.  | + | (-.532)  | R = .701  | SE = .37 |
| 51 | DIGIT 5 TIP-CROTCH | = | (.283)H.L.  | + | (.124)H.B.  | + | (-.570)  | R = .619  | SE = .35 |
| 52 | DIGIT 1 TIP-WRIST  | = | (.854)H.L.  | + | (-.247)H.B. | + | (-2.358) | R = .685  | SE = .73 |
| 53 | DIGIT 2 TIP-WRIST  | = | (.889)H.L.  | + | (.122)H.B.  | + | (-.210)  | R = .898  | SE = .41 |
| 54 | DIGIT 3 TIP-WRIST  | = | (.942)H.L.  | + | (.081)H.B.  | + | (.135)   | R = .951  | SE = .27 |
| 55 | DIGIT 4 TIP-WRIST  | = | (.891)H.L.  | + | (.143)H.B.  | + | (-.318)  | R = .897  | SE = .39 |
| 56 | DIGIT 5 TIP-WRIST  | = | (.799)H.L.  | + | (.225)H.B.  | + | (-1.421) | R = .804  | SE = .55 |

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F Multiple Regression Equations in Terms of Hand Length & Fist Circumference

|                       |   |                                     |           |          |
|-----------------------|---|-------------------------------------|-----------|----------|
| 1 HAND LENGTH         | = | (1.000)H.L. + (0.000)F.C. + (0.000) | R = 1.000 | SE = .00 |
| 2 HAND BREADTH META   | = | (.069)H.L. + (.196)F.C. + (1.006)   | R = .781  | SE = .24 |
| 3 HAND CIRC METACARP  | = | (.138)H.L. + (.437)F.C. + (5.385)   | R = .785  | SE = .51 |
| 4 HAND CIRC META MIN  | = | (-.008)H.L. + (.626)F.C. + (6.060)  | R = .683  | SE = .92 |
| 5 HAND CIRC TIPS EVN  | = | (.218)H.L. + (.606)F.C. + (3.644)   | R = .786  | SE = .72 |
| 6 FIST CIRC           | = | (0.000)H.L. + (1.000)F.C. + (0.000) | R = 1.000 | SE = .00 |
| 7 WRIST CIRC          | = | (.183)H.L. + (.286)F.C. + (4.597)   | R = .585  | SE = .52 |
| 8 HAND THICK AT META  | = | (-.003)H.L. + (.064)F.C. + (1.225)  | R = .455  | SE = .15 |
| 9 HAND DPTH THENR PAD | = | (.025)H.L. + (.144)F.C. + (1.146)   | R = .520  | SE = .33 |
| 10 DIG 1 JOINT BROTH  | = | (.016)H.L. + (.044)F.C. + (.521)    | R = .557  | SE = .10 |
| 11 DIGIT 1 JOINT DPTH | = | (.014)H.L. + (.041)F.C. + (.391)    | R = .515  | SE = .10 |
| 12 DIGIT 1 JOINT CIRC | = | (.043)H.L. + (.131)F.C. + (1.586)   | R = .597  | SE = .26 |
| 13 DIG 2 DST JNT BOTH | = | (.005)H.L. + (.038)F.C. + (.507)    | R = .531  | SE = .08 |
| 14 DIG 2 DST JNT DPTH | = | (-.006)H.L. + (.035)F.C. + (.519)   | R = .474  | SE = .08 |
| 15 DIG 2 DST JNT CIRC | = | (.001)H.L. + (.112)F.C. + (1.661)   | R = .563  | SE = .21 |
| 16 DIG 2 PR JNT BROTH | = | (.012)H.L. + (.041)F.C. + (.587)    | R = .600  | SE = .08 |
| 17 DIG 2 PR JNT DPTH  | = | (.002)H.L. + (.045)F.C. + (.467)    | R = .598  | SE = .08 |
| 18 DIG 2 PR JNT CIRC  | = | (.022)H.L. + (.138)F.C. + (1.579)   | R = .665  | SE = .22 |
| 19 DIG 3 DST JNT BOTH | = | (.002)H.L. + (.033)F.C. + (.675)    | R = .488  | SE = .08 |
| 20 DIG 3 DST JNT DPTH | = | (.002)H.L. + (.034)F.C. + (.430)    | R = .501  | SE = .08 |
| 21 DIG 3 DST JNT CIRC | = | (.008)H.L. + (.105)F.C. + (1.729)   | R = .547  | SE = .22 |
| 22 DIG 3 PR JNT BROTH | = | (.012)H.L. + (.033)F.C. + (.795)    | R = .504  | SE = .09 |
| 23 DIG 3 PR JNT DPTH  | = | (.013)H.L. + (.040)F.C. + (.444)    | R = .549  | SE = .09 |
| 24 DIG 3 PR JNT CIRC  | = | (.035)H.L. + (.114)F.C. + (2.042)   | R = .603  | SE = .22 |
| 25 DIG 4 DST JNT BOTH | = | (.003)H.L. + (.034)F.C. + (.532)    | R = .520  | SE = .08 |
| 26 DIG 4 DST JNT DPTH | = | (.001)H.L. + (.035)F.C. + (.363)    | R = .510  | SE = .08 |
| 27 DIG 4 DST JNT CIRC | = | (.006)H.L. + (.101)F.C. + (1.605)   | R = .566  | SE = .20 |
| 28 DIG 4 PR JNT BRI   | = | (.009)H.L. + (.032)F.C. + (.734)    | R = .465  | SE = .09 |
| 29 DIG 4 PR JNT DPT   | = | (.010)H.L. + (.033)F.C. + (.571)    | R = .445  | SE = .10 |
| 30 DIG 4 PR JNT CIRC  | = | (.029)H.L. + (.102)F.C. + (2.067)   | R = .556  | SE = .22 |
| 31 DIG 5 DST JNT BOTH | = | (.009)H.L. + (.041)F.C. + (.453)    | R = .554  | SE = .07 |
| 32 DIG 5 DST JNT DPTH | = | (.007)H.L. + (.031)F.C. + (.235)    | R = .494  | SE = .08 |
| 33 DIG 5 DST JNT CIRC | = | (-.012)H.L. + (.112)F.C. + (1.294)  | R = .585  | SE = .19 |
| 34 DIG 5 PR JNT BROTH | = | (.010)H.L. + (.031)F.C. + (.511)    | R = .505  | SE = .08 |
| 35 DIG 5 PR JNT DPTH  | = | (.017)H.L. + (.025)F.C. + (.464)    | R = .477  | SE = .08 |
| 36 DIG 5 PR JNT CIRC  | = | (.046)H.L. + (.090)F.C. + (1.421)   | R = .584  | SE = .20 |
| 37 WRIST BREADTH      | = | (.019)H.L. + (.132)F.C. + (2.212)   | R = .555  | SE = .27 |
| 38 DIGIT 1 HT PERP WC | = | (.654)H.L. + (-.069)F.C. + (-1.373) | R = .610  | SE = .67 |
| 39 DIGIT 2 HT PERP WC | = | (.877)H.L. + (.041)F.C. + (-.313)   | R = .857  | SE = .47 |
| 40 DIGIT 3 HT PERP WC | = | (.942)H.L. + (.033)F.C. + (-.079)   | R = .951  | SE = .27 |
| 41 DIGIT 4 HT PERP WC | = | (.867)H.L. + (.066)F.C. + (-.824)   | R = .900  | SE = .39 |
| 42 DIGIT 5 HT PERP WC | = | (.717)H.L. + (.100)F.C. + (-2.339)  | R = .791  | SE = .55 |
| 43 CROTCH 1 HEIGHT    | = | (.416)H.L. + (-.049)F.C. + (-.522)  | R = .576  | SE = .46 |
| 44 CROTCH 2 HEIGHT    | = | (.553)H.L. + (-.029)F.C. + (.665)   | R = .756  | SE = .39 |
| 45 CROTCH 3 HEIGHT    | = | (.518)H.L. + (-.005)F.C. + (.646)   | R = .748  | SE = .39 |
| 46 CROTCH 4 HEIGHT    | = | (.506)H.L. + (.007)F.C. + (-.526)   | R = .734  | SE = .41 |
| 47 DIGIT 1 TIP-CROTCH | = | (.323)H.L. + (.025)F.C. + (-1.132)  | R = .690  | SE = .32 |
| 48 DIGIT 2 TIP-CROTCH | = | (.336)H.L. + (.076)F.C. + (-1.012)  | R = .689  | SE = .38 |
| 49 DIGIT 3 TIP-CROTCH | = | (.392)H.L. + (.056)F.C. + (-.629)   | R = .758  | SE = .33 |
| 50 DIGIT 4 TIP-CROTCH | = | (.391)H.L. + (.034)F.C. + (-.545)   | R = .702  | SE = .37 |
| 51 DIGIT 5 TIP-CROTCH | = | (.253)H.L. + (.065)F.C. + (-.590)   | R = .632  | SE = .34 |
| 52 DIGIT 1 TIP-WRIST  | = | (.842)H.L. + (-.054)F.C. + (-2.706) | R = .683  | SE = .73 |
| 53 DIGIT 2 TIP-WRIST  | = | (.881)H.L. + (.042)F.C. + (-.169)   | R = .890  | SE = .41 |
| 54 DIGIT 3 TIP-WRIST  | = | (.929)H.L. + (.036)F.C. + (.099)    | R = .952  | SE = .27 |
| 55 DIGIT 4 TIP-WRIST  | = | (.875)H.L. + (.057)F.C. + (-.344)   | R = .898  | SE = .39 |
| 56 DIGIT 5 TIP-WRIST  | = | (.748)H.L. + (.116)F.C. + (-1.552)  | R = .811  | SE = .54 |